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August 13, 2008

Committee Secretary
Senate Select Committee on the National Broadband Network
Department of the Senate
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Secretary,

iiNet Ltd welcomes this opportunity to submit comments to the Senate Select Committee's inquiry into *"the Government's proposal to partner with the private sector to upgrade parts of the existing network to fibre to provide minimum broadband speeds of 12 megabits per second to 98 per cent of Australians on an open access basis".*

The iiNet group is strongly customer focused and with 480,000 internet customers, is Australia's third largest ISP. We employ 1,400 staff in three countries and have invested significantly in network infrastructure in Australia in order to develop our own unique style of award winning products and services.

We are active in the market not only as a competitive innovator and effective industry consolidator, but also as an active participant in the Terria consortium and other industry groups.

iiNet has contributed extensively to Terria's submission to the Senate Committee and, therefore, we direct the Committee's attention to that submission as representative of the view of iiNet Ltd. iiNet has also made previous submissions on Regulatory matters in relation to structural changes required for the industry and also in relation to the NBN. These recent submissions may be helpful in the Committee's reflections on the issues raised in association with the NBN initiative and I have attached them for your consideration.

If you have any enquiries in relation to iiNet's submission, please contact me on (08) 9213 1371 or by e-mail at sdalby@staff.iinet.net.au .

Yours sincerely

Stephen Dalby
Chief Regulatory Officer
iiNet Ltd

Attachments -

	Document	Published	Link
1.	***"The Myth Of Fibre"*** An examination of Telstra claims that a 6Mbps[1] broadband service requires a Telstra owned and government funded FTTN.	May 06	iiNet The Myth of Fibre May 06.pdf
2.	***"20,000 nodes"*** An illustration of the distribution of 20,000 nodes[2] for a Telstra FTTN	August 06	iiNet 20,000 nodes Aug 06.pdf
3.	***"What Price FTTN?"*** An open letter querying the impact of FTTN on consumer prices. Published in CommsDay	February 08	iiNet What price FTTN Feb 08.pdf
4.	***iiNet & Internode joint 'Heatmap'*** A visual representation of speeds currently being delivered to customers of the iiNet and Internode networks, without FTTN. Released with "What Price FTTN?"	February 08	iiNet What Price FTTN Heatmap Feb 0
5.	***"Access Seeker Requirements"*** A submission to the Expert Panel on suggested improvements for an open access network.	March 08	iiNet NBN access seeker requirements
6.	***"Access Seeker Requirements"*** A press release summarizing iiNet's comments in the submission above.	April 08	iiNet- NBN Access seeker reqts - Press F
7.	***"Let's Keep the Vogons off the Expert Panel"*** An open letter commenting on the importance of a customer focused Expert Panel. Published in CommsDay	May 08	Let's keep the Vogons off the 'Exper
8.	***"Regulatory Submission On the requirements for an Open Access National Broadband Network"*** A submission to the Expert Panel on suggested Regulatory improvements for an open access NBN.	June 08	iiNet NBN regulatory submission - June 08.

[1] *Subsequently changed to12 Mbps*
[2] *Subsequently increased to 88,000 nodes*

The Myth of Fibre

May 2006

Notes on the performance of consumer ADSL services connected to the iiNet DSLAM network.

Greg Bader
CTO,
iiNet Ltd

Steve Dalby
GM Regulatory,
iiNet Ltd

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Introduction

iiNet commenced the rollout of its own ADSL infrastructure (DSLAMs) in May 2004 and connected its first customers in July 2004. By installing its own DSLAMs, iiNet was able to define its own ADSL products, rather than simply reselling a pre-packaged Telstra product.

This meant, for example, that the iiNet broadband product could operate initially at speeds up to 8000 kbps[1] on the ADSL1 standard in force at the time. As ADSL2 and later ADSL2+ standards were ratified for Australia, the iiNet products could steadily increase in speed with "up to 12,000 kbps" and later "up to 24,000 kbps."

At the time of writing Telstra's wholesale ADSL products are still constrained to a maximum speed of 1,500 kbps.

This paper provides a number of real world examples of speeds being experienced by iiNet customers on an iiNet DSLAM.

The Myth of Fibre

There has been much discussion in the media about the need for fibre in order to bring Australia into the 21st century in respect of broadband performance.

Much of the comment is based on a dual premise that only Telstra can deliver higher speeds and that the solution to broadband performance levels is inextricably linked to a Fibre To The Node (FTTN) Network.

The myth being perpetrated is that unless there is a massive and urgent rollout of fibre infrastructure across Australia, Australians will be doomed to a future of limited broadband speeds or 'fraudband' usually quoted at between 256 kbps and 1500kbps.

Indeed, the proposal put to the Federal government on 11 August, 2005 in Telstra's *"A Digital Compact & National Broadband Plan",* was that an investment of $5.7B on new fibre networks was required to provide 98% of Australian homes with access to *"Next Generation broadband service (6MB) and advanced services."*

This carries with it the obvious implication that:

a) Fibre is required to achieve broadband speeds of 6MB;

b) Copper (ADSL) can't deliver anywhere near the same performance of fibre based services.

This is the myth.

[1] Maximum download speeds quoted in all cases - attainable under ideal conditions.

iiNet is able to dispel this myth by demonstrating that, for many months, iiNet's customers have been routinely achieving speeds in excess of this *"Next Generation broadband service"* level of 6Mbps. Everyday.

This is based on the actual performance of iiNet customers subscribing to ADSL2+ products and using standard, commonly available ADSL2+ modems.

These customers are not connected over a fibre network, nor are they all located within 1.5km from the telephone exchange. Rather, they are connecting via the copper Customer Access Network (CAN) that has been used on an 'as is' basis. No remedial cabling, no upgrades, no domestic re-wiring, no special installers, just consumers using plug and play components and iiNet ADSL.

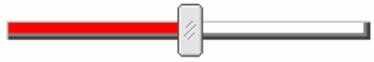
Performance Vs Speed

On iiNet's network, customers can choose from four profiles to adjust the performance and stability of their ADSL2+ connection via a dynamic web-based interface.

The four settings available are :-

1. **Safe** (ADSL1 modems. Limited to 8Mbps)
2. **Controlled** (where line quality is low)
3. **Standard** (default)
4. **Thrillseeker** (pushing the limit)

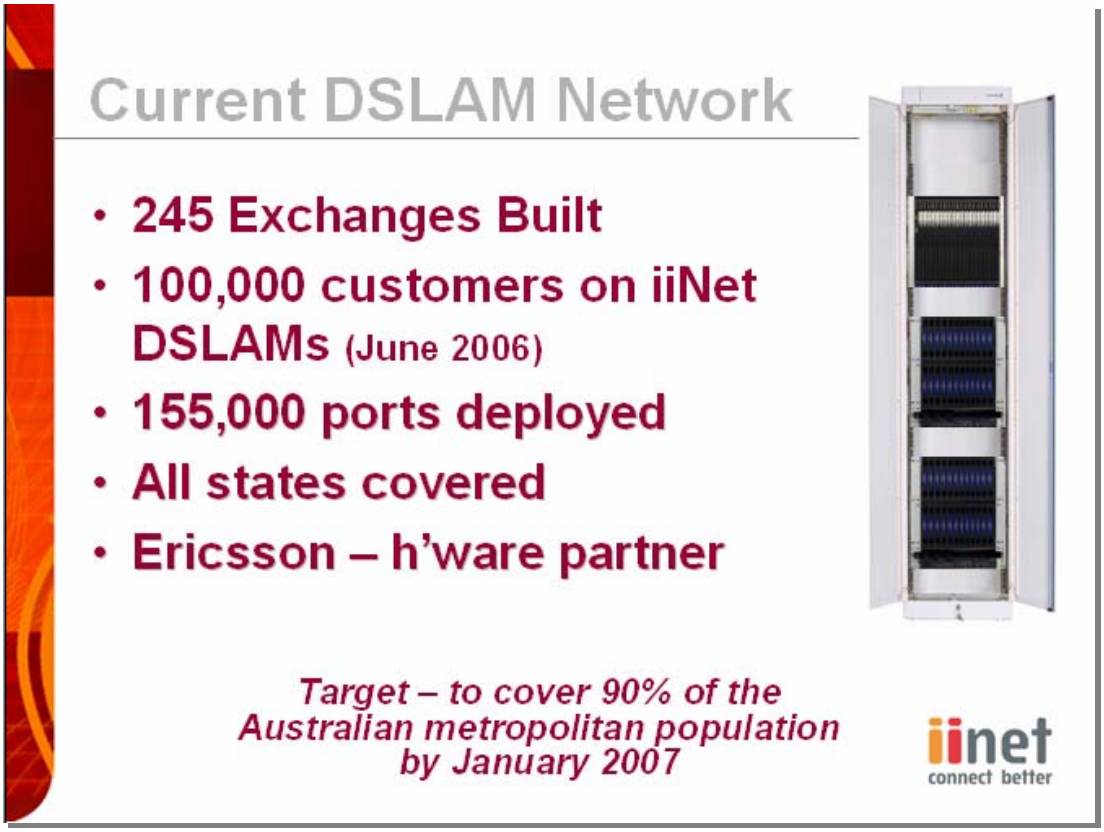
Figure 1 - Customer speed selection web interface



Controlled (ADSL2/2+ speeds up to 24,000 kbps)

Profile	Speed	Description
Safe	ADSL1 Speed up to 8,000kbps	If you have an older modem it may not support ADSL2/2+ speeds in excess of 8,000kbps. So play it safe.
Controlled	ADSL2/2+ Speeds up to 24,000 kbps (FAST)	If you want to push the speed up a little but keep a stable connection. You may need this if you have poor line quality.
Standard	ADSL2/2+ Speeds up to 24,000 kbps (FASTER)	This is our default setting that suits most users. It's still really fast, but usually gives good connection stability.
Thrillseeker	ADSL2/2+ Speeds up to 24,000 kbps (FASTEST)	If you want to push the broadband speed limit. You'll definitely get the fastest speeds possible on your line. But you may hit the occasional speed bump or two.

Figure 2 - Network status



Real Data

iiNet began deploying its own ADSL infrastructure in May 2004 and has since been able to collect actual performance data on the services connected to its network.

As can be seen from the available customer speed profiles (above), the slowest profile "safe" permits synchronization at up to 8 Mbps while the fastest setting allows speeds of up to 24 Mbps.

The data collected from iiNet DSLAMs includes the synchronization speeds being experienced by customers as the customer's modem communicates with the DSLAM.

To illustrate the performance on the ground, iiNet has produced a number of 'heat maps' using colour coding to indicate a range of speeds being attained in various exchanges.

In addition to the individual heat maps for various exchanges, a metropolitan heat map of Sydney (Figure 13) is also provided.

Filters used

In order for the data to meaningful, the iiNet services in each location included needed to be filtered.

Excluded from the data are customers -

- Connected via Telstra's DSLAMs (256/512/1500kbps)
- Service subscriptions with fixed speeds (256/512/1500kbps)
- Connected via ADSL1 modems (max 8Mbps)
- Who have selected a 'safe' speed profile (max 8Mbps)

This filtering allows us to eliminate modem technology or plan types that artificially restrict speeds.

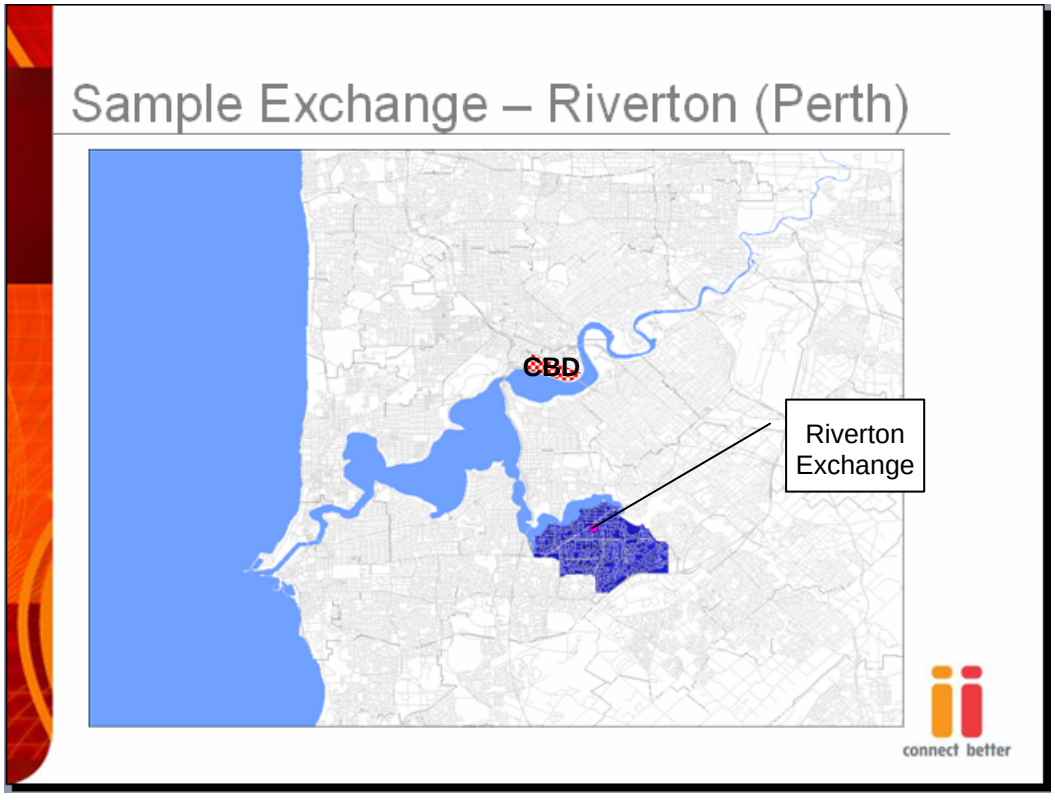
To see how this filtering affects the heat maps, a sample exchange was modeled with the various filters applied step by step.

Sample exchange – Riverton, WA

This is in a reasonably old area of Perth, developed originally in the 1960s. The copper cables are not in particularly good condition, but are serviceable.

Riverton exchange area (Figure 3) is approximately 10 km south of the Perth CBD.

Figure 3 - Riverton Exchange



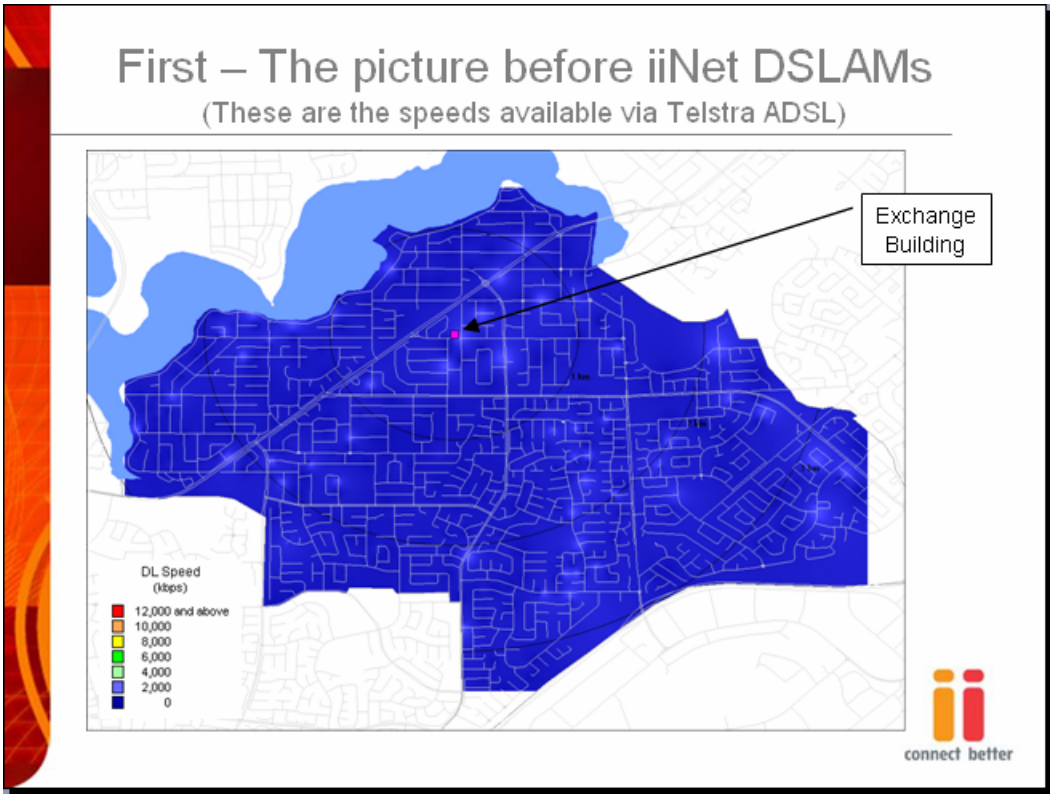
All customers – before iiNet DSLAM

Prior to the commissioning of the iiNet DSLAM, speeds were artificially enforced as a result of the plan selected by the customer (Telstra imposes speed limits on their ADSL services). The speed settings available via Telstra were:

- 256 kbps/64 kbps
- 512 kbps/128 kbps
- 512 kbps/512 kbps
- 1500 kbps/256 kbps

The majority of services (used by iiNet customers) in Riverton before the iiNet DSLAM upgrade (Figure 4), were set at 256kbps with some 512kbps and a small number of 1,500kbps services. The heat map reflects this distribution, coding the low service speeds as blue, regardless of their distance from the exchange.

Figure 4 - Riverton on Telstra services



All customers – after iiNet DSLAM

In the process of migrating customer connections from the Telstra Network to the iiNet network, all customers' connections were re-terminated, without any changes to the customer's plan.

After commissioning the iiNet DSLAM, we see the distribution of the 1,013 active iiNet services then connected (Figure 5) and the breadth of speeds attainable is evident by the range of colours displayed on this map.

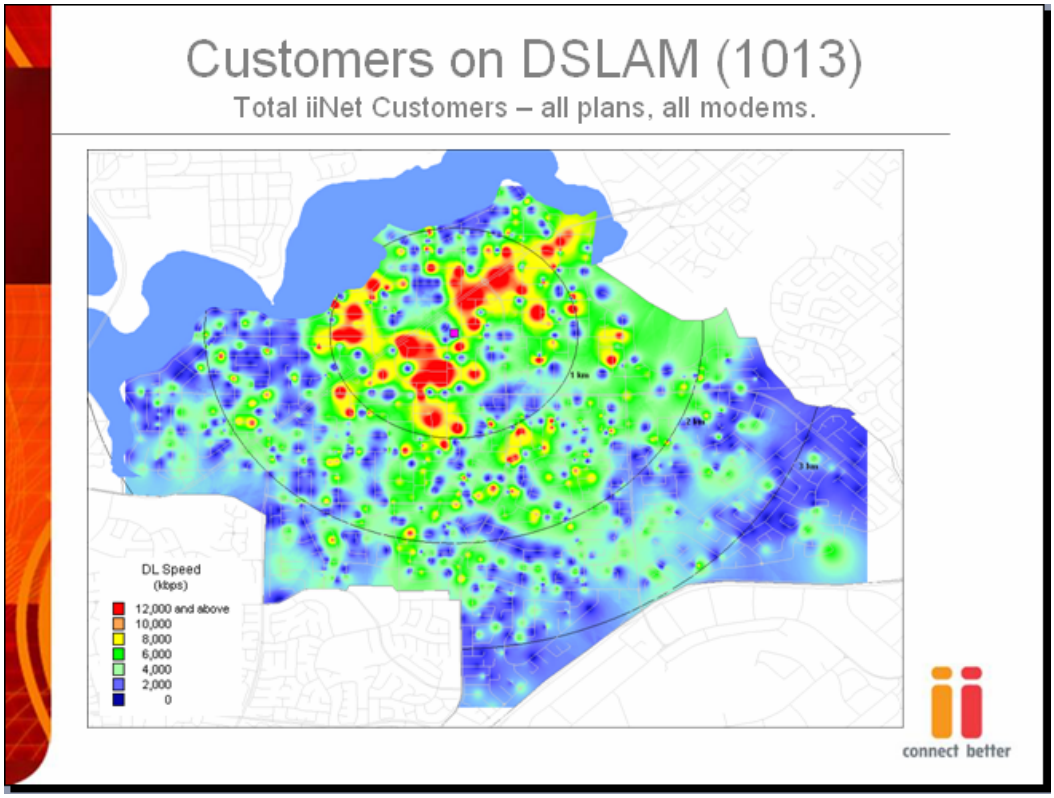
Customers on the Riverton exchange after the upgrade were made up of:

- Customers that could now achieve higher speeds but elected (for their own reasons) to remain on pricing plans that have *fixed speeds* (256/512/1500kbps).
- Customers that were on *unrestricted speed* plans, but still connect via old modems that cannot take advantage of the higher performance ADSL2+ standards.
- Customers have upgraded both their plans and their hardware but may have selected a 'safe' speed profile.

The heat map shows a mixed distribution of speeds being delivered.

Some very 'cool' blue patches around the exchange, but some 'hot' yellow spots at 2km or more are also visible.

Figure 5 - Riverton on iiNet DSLAM



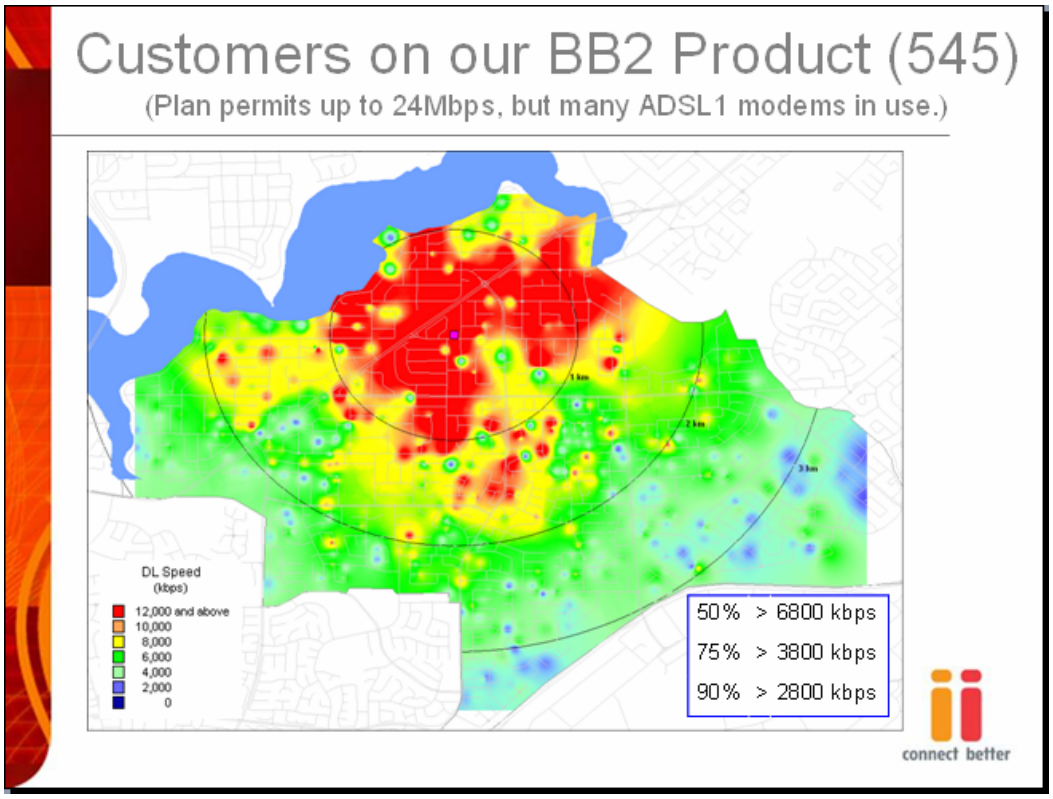
High speed plan customers

Filtering the data further, when we examine those 545 customers on Riverton who have moved to the unrestricted speed plans (Figure 6), we see a marked improvement in the broadband performance experienced.

Some of these customers are still limited by their modems, so that although the plan is not speed limited, the customer's equipment is only capable of running at a maximum of 8,000kbps. Higher speeds are possible if the customer pays for a new modem but many are very pleased with the unrestricted ADSL1 service and don't make that move.

In this heat map, it is possible to see the improvement in speeds out to the borders of the exchange, where the green shading shows 4,000 kbps to 6,000 kbps as commonly available.

Figure 6 - Riverton with high speed plans



High speed plan customers with ADSL2+ modems

Finally, when we filter out those who have older modems, as well as those on 'slow' pricing plans, we get a true picture of actual performances available in this suburb (Figure 7).

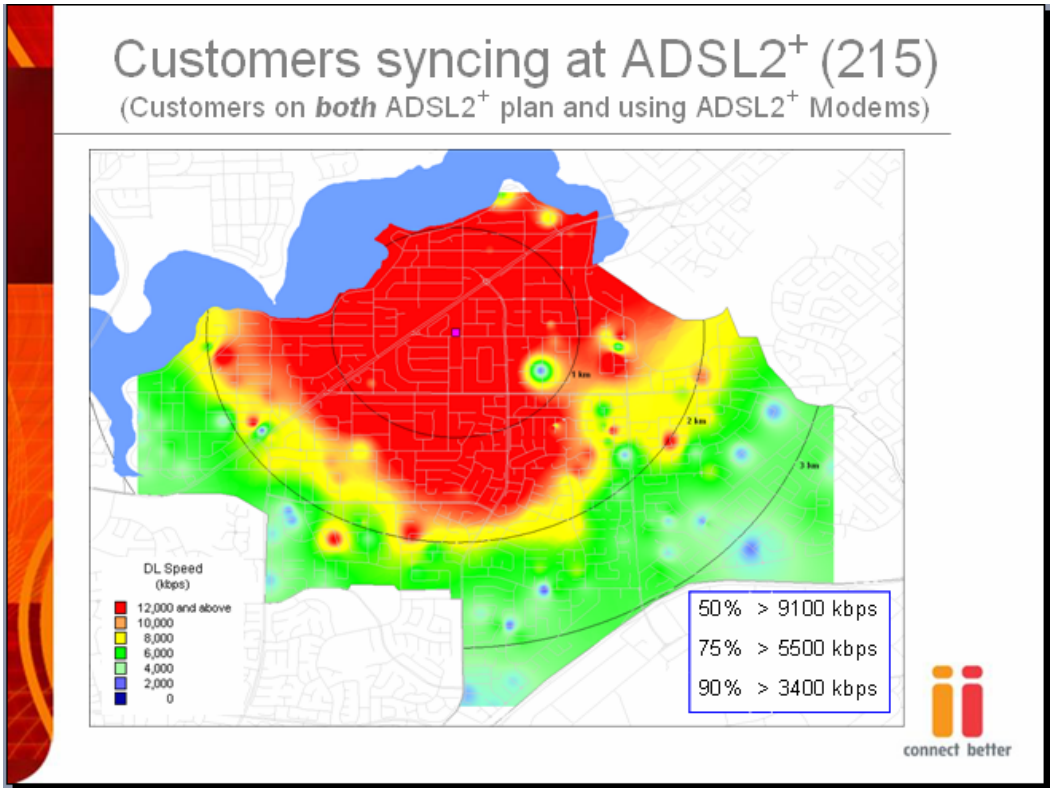
Speeds in excess of 12,000 kbps (red) are commonplace with some customers getting a stable connection at 22,000 kbps.

- 50% of the sample are achieving higher than 9,100kbps
- 75% are achieving higher than 5,500kbps
- 90% are achieving higher than 3,400kbps

These speeds are even more impressive when we consider the age of the copper lines in this exchange catchment. (Interestingly, we can clearly see a low

speed incursion into the 1km radius. After investigation, a line fault in the cable was revealed in this location.)

Figure 7 - Riverton ADSL2+ only



Other exchanges

Similar heat maps are shown below for Victoria Park, Toowong, Chatswood, Redfern, and Northcote. All of these exchanges outperform the broadband performance results achieved in Riverton.

The exchanges chosen for this paper are representative of a cross section of more than 245 exchanges currently online. They were **not** chosen because of a higher than average proportion of high speeds achievable by iiNet customers.

The following heat maps have the same filters applied as per Figure 7. That is the speeds indicated are the services which are on iiNet DSLAMs, subscribed to high speed plans, have ADSL2+ modems installed and that have an unrestricted profile selected.

Figure 8 - Victoria Park (WA) Exchange

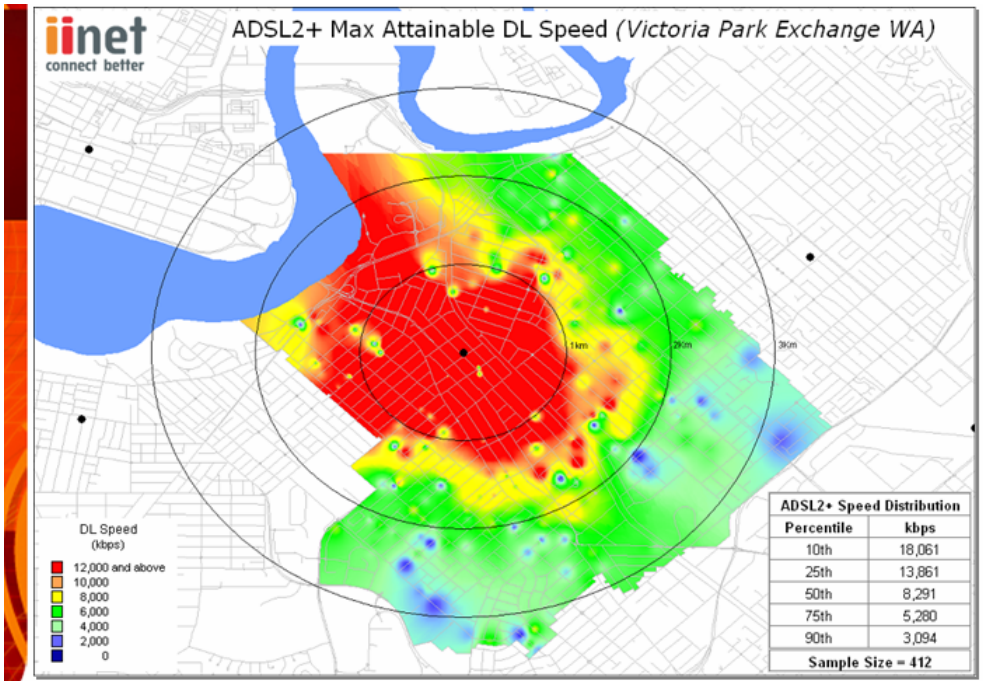


Figure 9 - Toowong (Qld) Exchange

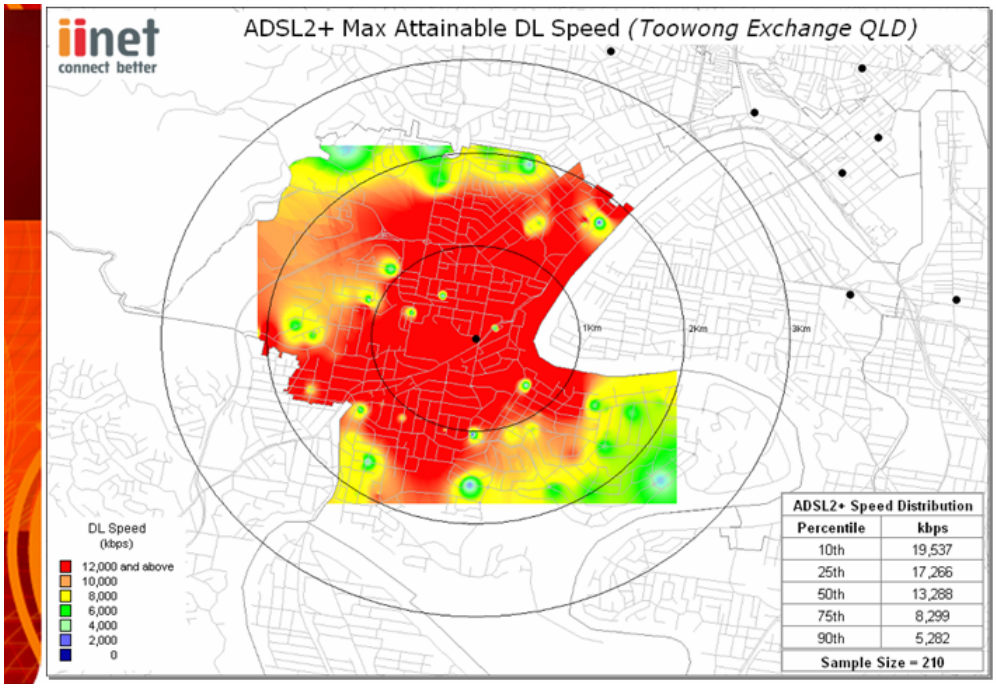


Figure 10 - Chatswood (NSW) Exchange

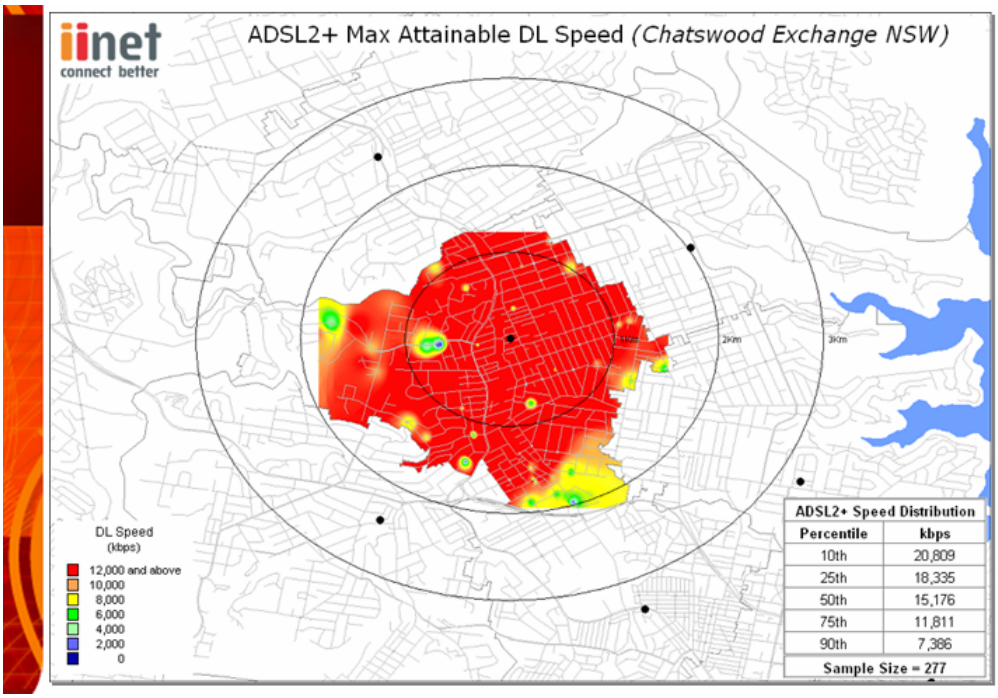


Figure 11 - Redfern (NSW) Exchange

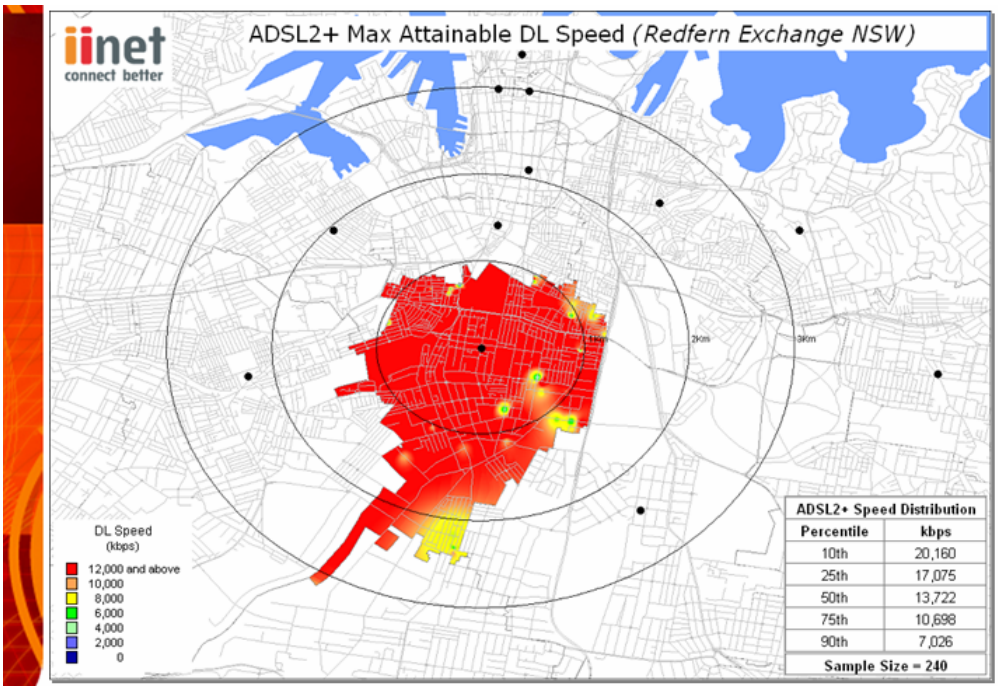
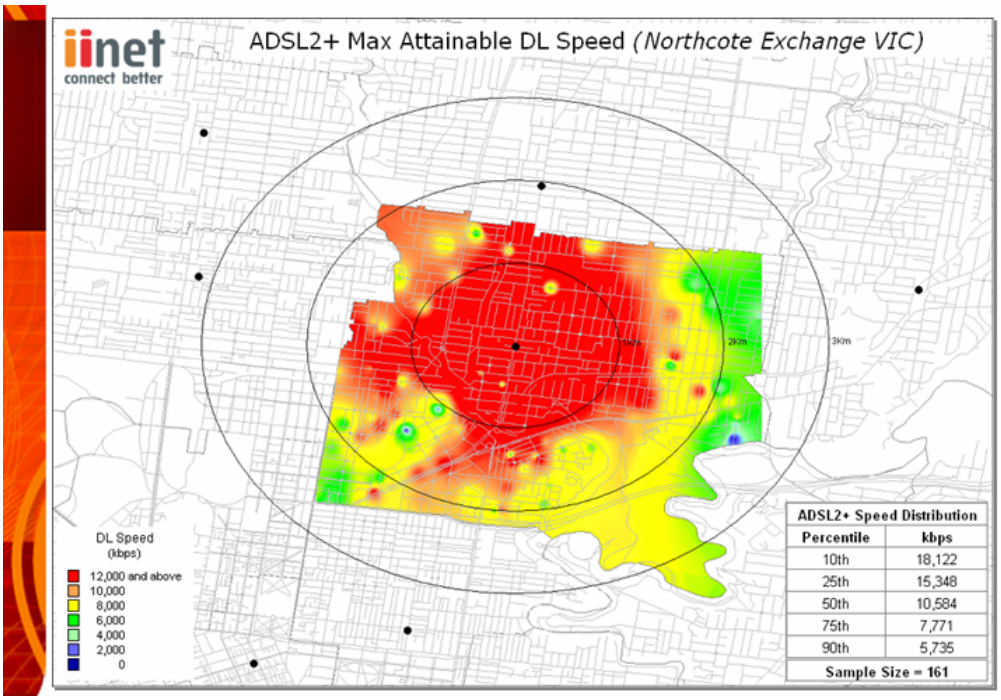


Figure 12 - Northcote (Vic) Exchange

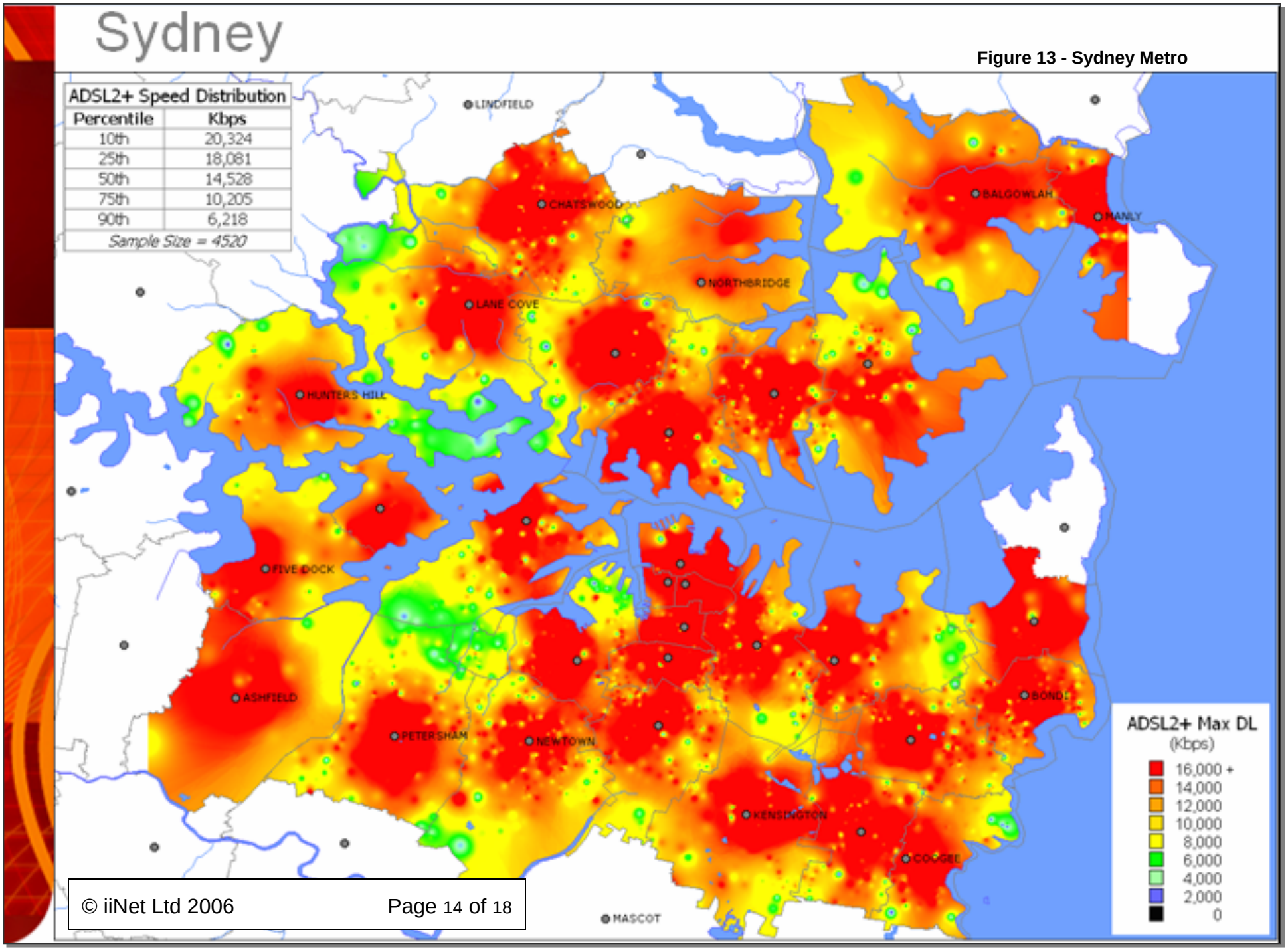


Sydney

It's possible to argue that the exchanges chosen above were selected for their performance. However, if we look at the total results for the Sydney metropolitan area we see that, in fact, these broadband speeds are routinely available across metropolitan Australia.

Sydney

Figure 13 - Sydney Metro



Conclusion

The greatest strength of any myth is its ability to convince us of its necessity. The immediate need for an FTTN network is a myth.

For most customers in metropolitan areas to achieve 6000kbps, it is simply a matter of utilising the existing copper CAN. Whatever other purposes may be served by building a multi-billion dollar fibre network, the provision of high performance ADSL (6000kbps or more) is not amongst them.

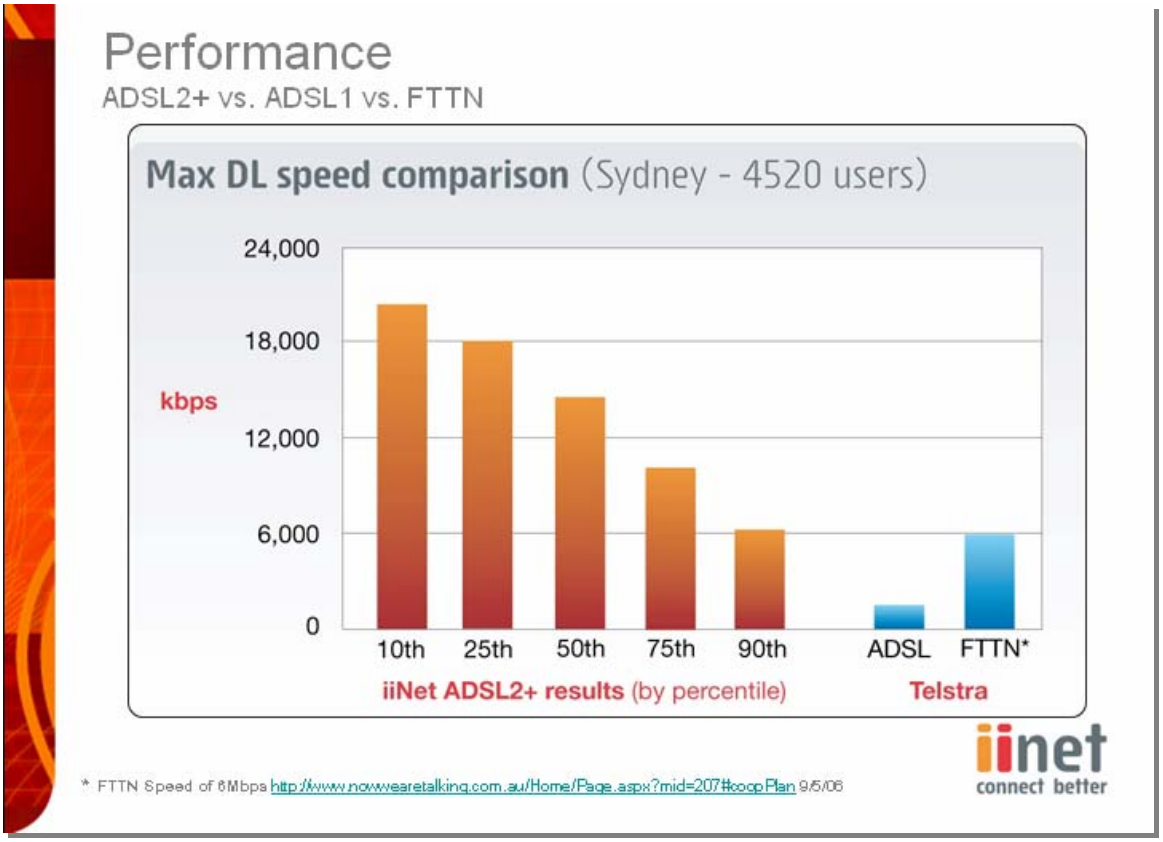
Contrary also to media suggestions that high speeds are unachievable outside a 1.5km radius, the results contained in this paper clearly show this to be incorrect. Just as artificial constraints on ADSL speeds (E.g., 256kbps) are contrived and unnecessary, so too are claims of a hard and fast limitation of a 1.5km radius.

We don't need a new monopoly fibre network to obtain high speed broadband.

We don't need a "Next Generation" network that can only deliver 6,000 kbps.

iiNet are delivering higher speeds today than Telstra can promise with its proposed FTTN network for suburbs throughout metropolitan Australia (Figure 15).

Figure 14 - Relative performance ADSL2+ FTTN



Furthermore, iiNet are achieving these results on the copper available to access seekers at commercial rates under the current access regime.

- iiNet customers are today routinely experiencing speeds in excess of 18,000kbps - on copper.
- Across the range of Sydney iiNet ADSL2+ customers, 50% enjoy more than 12,000 kbps - on copper.
- More than 90% of iiNet ADSL2+ customers in Sydney already enjoy more than 6,000 kbps - on copper.

Fibre may have a future potential for much higher bandwidth than copper, but clearly Telstra has severely down-played the performance of copper-based ADSL services. Speeds of 6,000kbps allow consumers to use IPTV, VOIP, and the other next generation products today, that are promised on FTTN tomorrow.

They have also overstated the need for fibre for the delivery of services.

In a Comms Day article of 25 May, 2006, it was reported –

> *"… the jury seems divided on how much bandwidth is actually needed to make the service (IPTV) work. The issue is important because the difference can be the billion dollar upgrade required to extend fibre closer to the customer.*
>
> *PCCW's network arm Cascade turned a few heads earlier this year when it claimed that it would build an IPTV network for True in Bangkok using 2Mbps connections.*
>
> *Business development director Ted Hsiung qualified that somewhat…. "You can get IPTV at slightly more than 2Mbps, up to around 2.5 if you use the MPEG 4 compression system. If you use MPEG 2 you're talking more about 4 to 4.5".*

The Final Questions

- If the current copper based CAN can support speeds up to 24Mbps with current technology, why do we need a FTTN network?
- If ADSL2+ can deliver in excess of 6Mbps today, why do we need a FTTN network?
- If services like IPTV need a network that is capable of 4.5Mbps, why do we need a FTTN network?
- If a FTTN network is going to reduce competition, why do we need a FTTN network?
- If a FTTN network is going to strand existing infrastructure and investment, why do we need a FTTN network?

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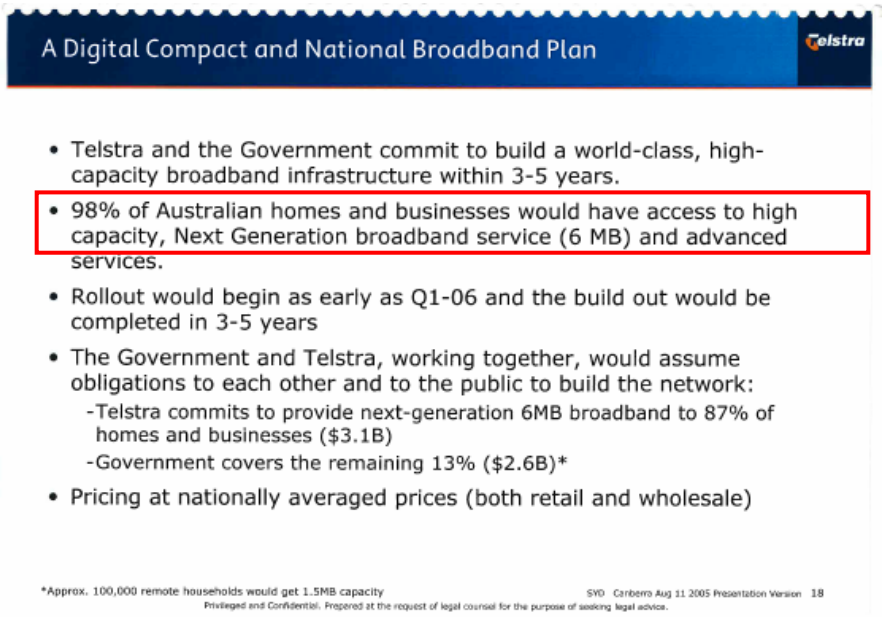
This paper is also available on line at http://www.iinet.net.au/about/media/

References

http://www.telstra.com.au/abouttelstra/investor/docs/tls339_briefingpaper.pdf

Telstra: The Path Forward (page 18)



A Digital Compact and National Broadband Plan

Telstra

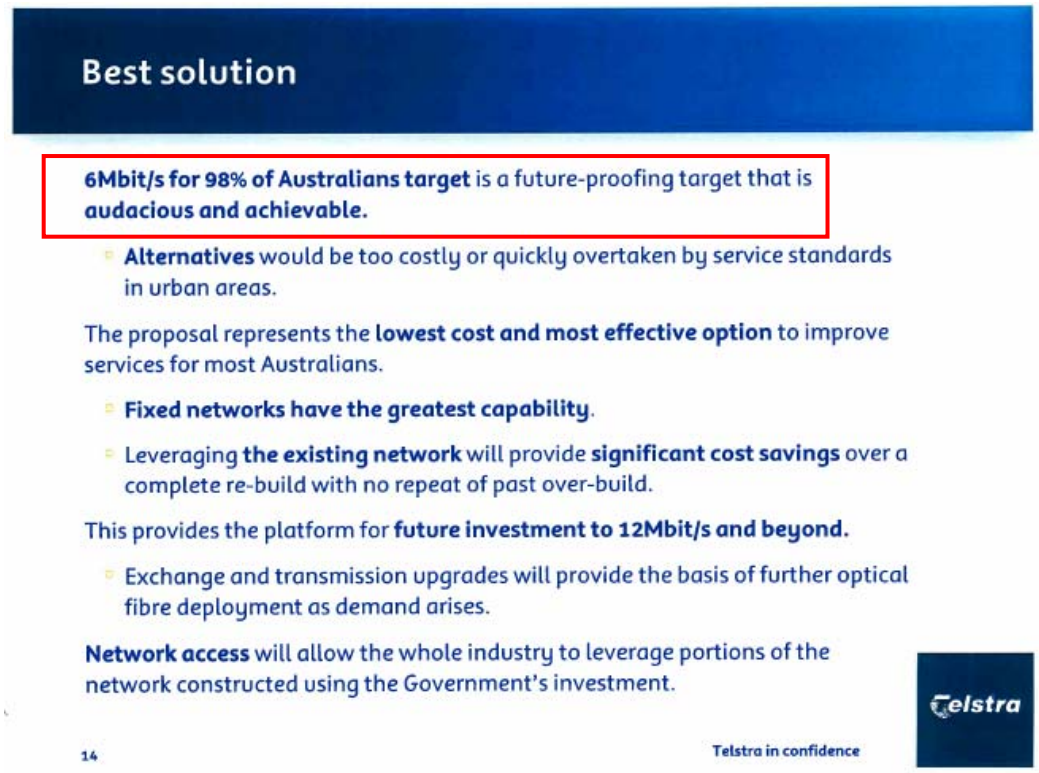
- Telstra and the Government commit to build a world-class, high-capacity broadband infrastructure within 3-5 years.
- 98% of Australian homes and businesses would have access to high capacity, Next Generation broadband service (6 MB) and advanced services.
- Rollout would begin as early as Q1-06 and the build out would be completed in 3-5 years
- The Government and Telstra, working together, would assume obligations to each other and to the public to build the network:
  - -Telstra commits to provide next-generation 6MB broadband to 87% of homes and businesses ($3.1B)
  - -Government covers the remaining 13% ($2.6B)*
- Pricing at nationally averaged prices (both retail and wholesale)

*Approx. 100,000 remote households would get 1.5MB capacity

SYD Canberra Aug 11 2005 Presentation Version 18

Privileged and Confidential. Prepared at the request of legal counsel for the purpose of seeking legal advice.

National Broadband Plan. (slide 7)



Best solution

6Mbit/s for 98% of Australians target is a future-proofing target that is **audacious and achievable.**

- **Alternatives** would be too costly or quickly overtaken by service standards in urban areas.

The proposal represents the **lowest cost and most effective option** to improve services for most Australians.

- **Fixed networks have the greatest capability.**
- Leveraging **the existing network** will provide **significant cost savings** over a complete re-build with no repeat of past over-build.

This provides the platform for **future investment to 12Mbit/s and beyond.**

- Exchange and transmission upgrades will provide the basis of further optical fibre deployment as demand arises.

Network access will allow the whole industry to leverage portions of the network constructed using the Government's investment.

14

Telstra in confidence

Telstra

FTTN

20,000 Nodes 450 exchanges ?

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What would 20,000 nodes look like?

I've selected a few of the exchanges that we've mapped for our ADSL2+ coverage and placed 44 dots representing a uniform distribution of 'nodes' inside each of the exchange boundaries.

Why 44 nodes? – Telstra indicated that they would need to deploy 20,000 nodes over 450 exchanges. This equates to an average of a little over 44 nodes per exchange.

On the following diagrams;

- A pink dot represents a 'node'.
- The dotted line represents the 1.5km mark, inside which Telstra originally proposed to connect services directly to the exchange.
- A black dot represents an exchange.

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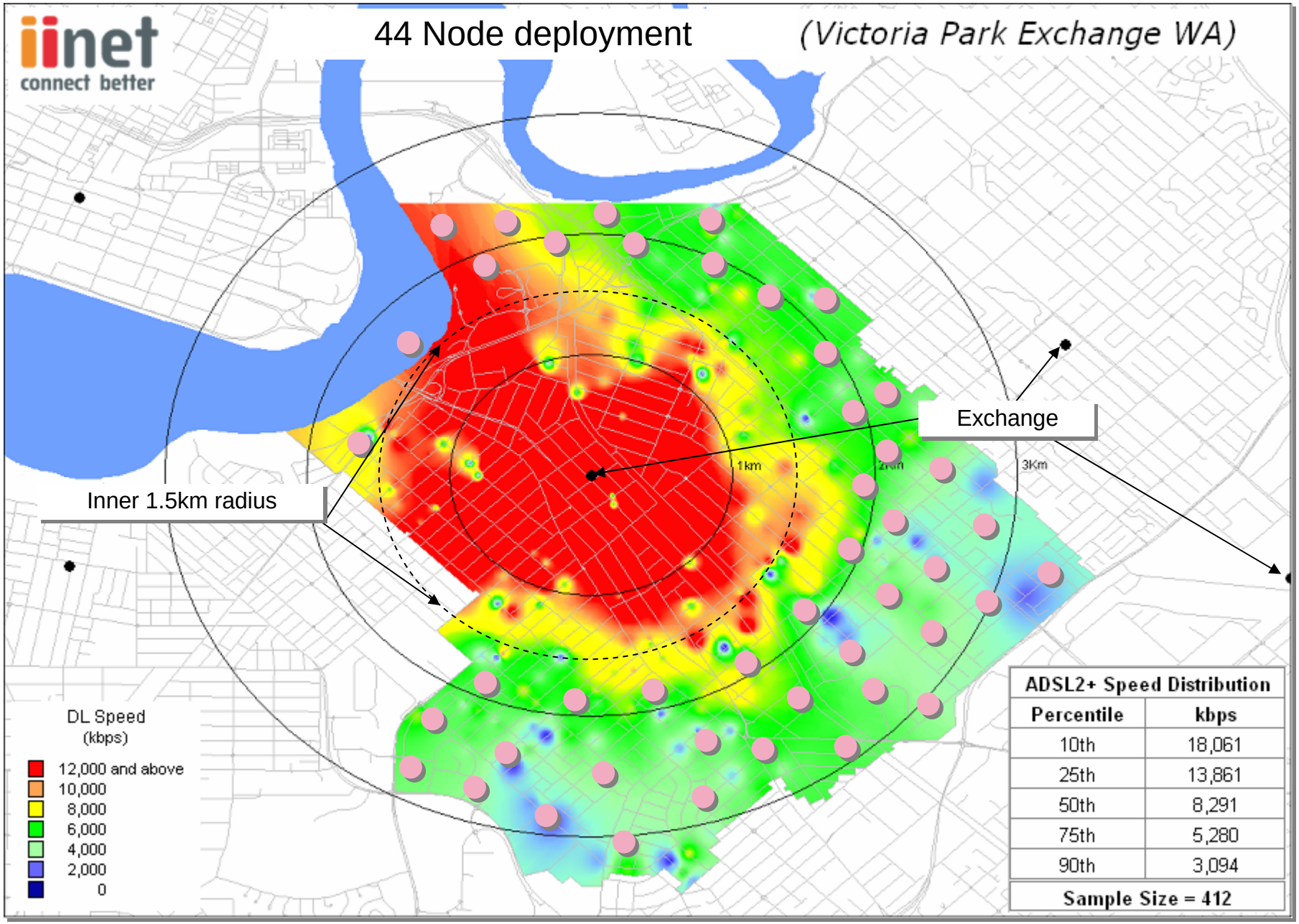
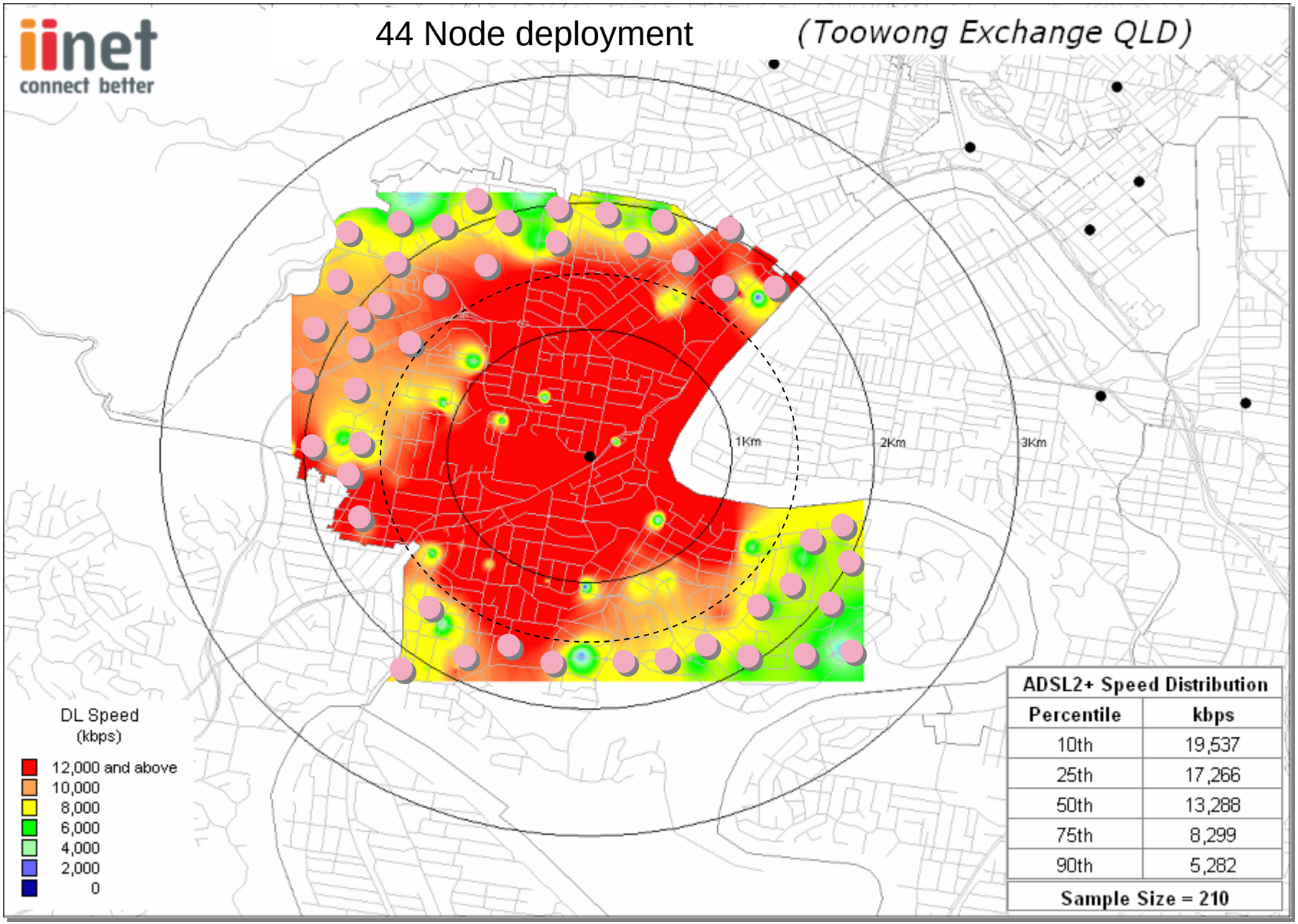
FTTN

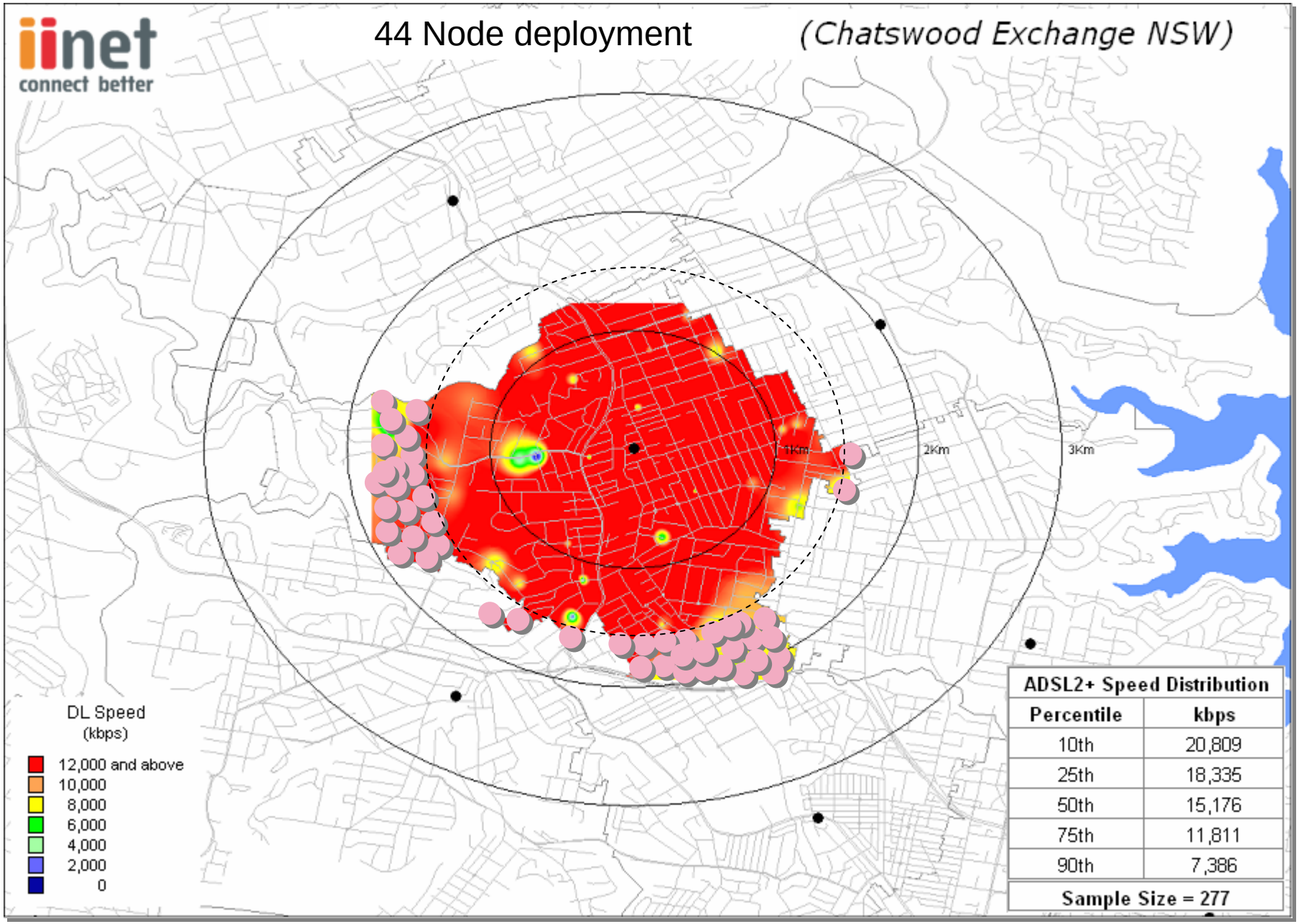

iinet
connect better
44 Node deployment
(Victoria Park Exchange WA)
Exchange
Inner 1.5km radius
1km
3Km
DL Speed
(kbps)
12,000 and above
10,000
8,000
6,000
4,000
2,000
0
ADSL2+ Speed Distribution
Percentile
kbps
10th
18,061
25th
13,861
50th
8,291
75th
5,280
90th
3,094
Sample Size = 412

44 Node deployment (Toowong Exchange QLD)



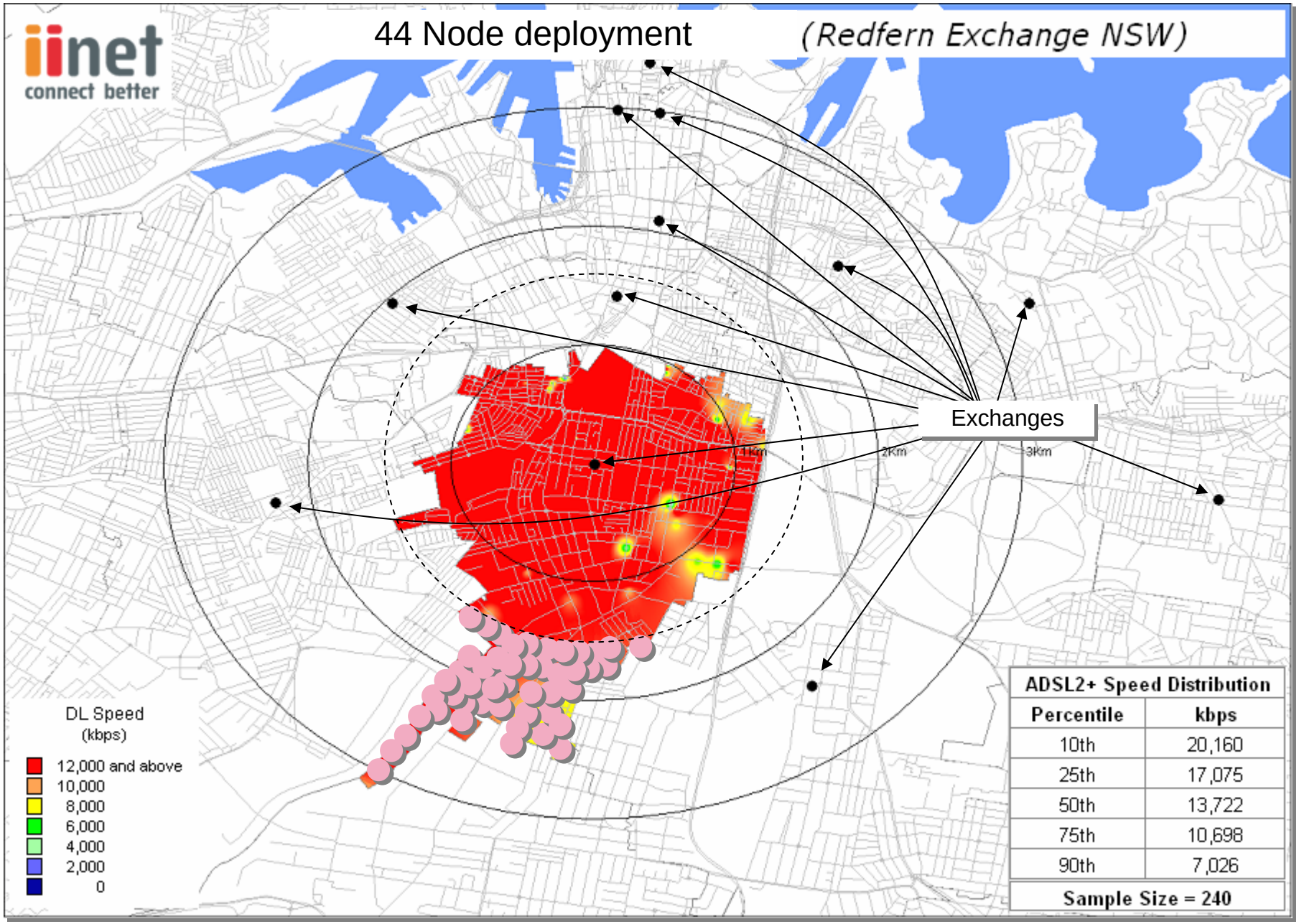
ADSL2+ Speed Distribution	
Percentile	kbps
10th	19,537
25th	17,266
50th	13,288
75th	8,299
90th	5,282
Sample Size = 210	

44 Node deployment (Chatswood Exchange NSW)



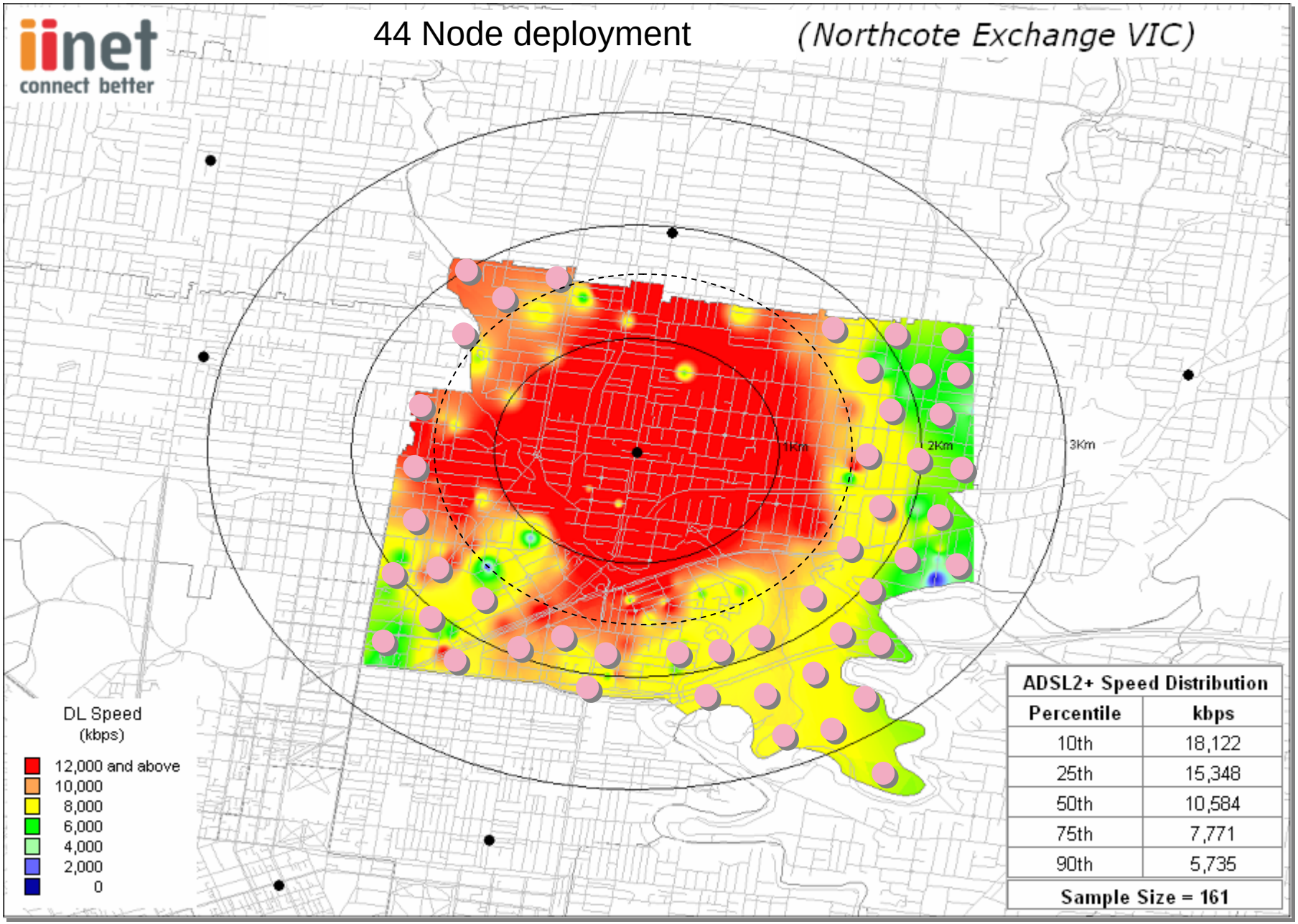
ADSL2+ Speed Distribution	
Percentile	kbps
10th	20,809
25th	18,335
50th	15,176
75th	11,811
90th	7,386
Sample Size = 277	

44 Node deployment (Redfern Exchange NSW)



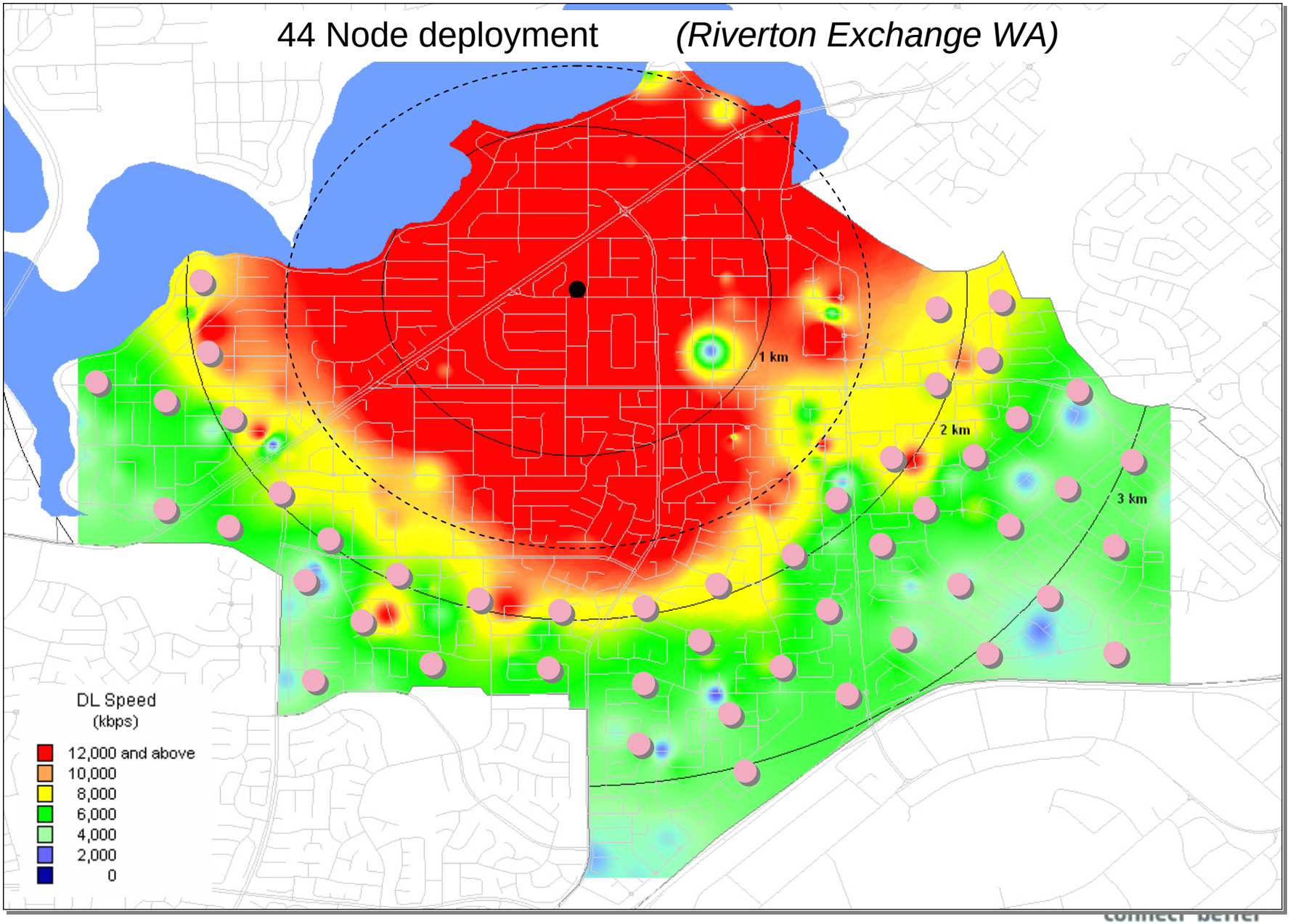
ADSL2+ Speed Distribution	
Percentile	kbps
10th	20,160
25th	17,075
50th	13,722
75th	10,698
90th	7,026
Sample Size = 240	

44 Node deployment (Northcote Exchange VIC)



ADSL2+ Speed Distribution	
Percentile	kbps
10th	18,122
25th	15,348
50th	10,584
75th	7,771
90th	5,735
Sample Size = 161	

44 Node deployment *(Riverton Exchange WA)*



25 February 2008

What price FTTN?

The stated objective of FTTN is to provide 98% of Australians with internet speeds of 12 Megabits per second.

The hard question most of my friends ask me when the subject of FTTN is raised, is -

"OK, but how much am I going to have to pay for it?".

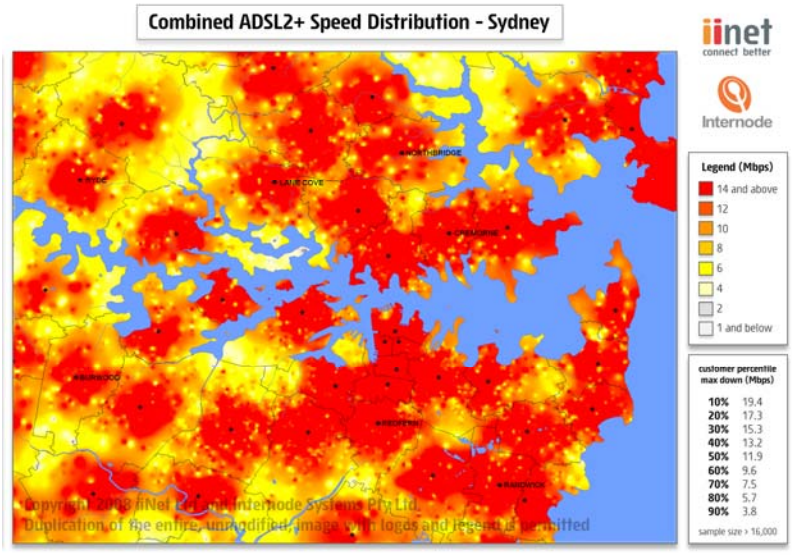
The answer, of course, is nobody really knows, because of the misinformation available on the subject of broadband - but I'd suggest that looking at 2008 prices for 12 Megabits per second (Mbps) internet access is a good start.

Today, $50 a month can buy you a great ADSL2+ service from a number of ISPs with their own infrastructure. [1] The market offerings are many and varied and there are a number of options for consideration, but let's stick to internet broadband access.

Can $50 get me 12Mbps? My oath it can.

ADSL2+ reportedly offers customers access speeds up to 24Mbps, given the right conditions (some even report speeds above that). iiNet have released actual speed data previously[2] - indicating measured speeds on customers connected to their ADSL2+ network.

New surveys conducted in 2008 support the early results. Both iiNet and Internode measured the speeds experienced by more than 16,000 customers connected to their networks. Combining the results of these two ADSL2+ surveys indicates that half of all their customers[3] regularly enjoy download speeds of 11.9Mbps. In addition, 80% of customers, today have access to speeds about 6 Megabits per second.



So, the answer to the question of how much should customers pay, seems to be fairly straightforward - They should pay no more tomorrow than they pay today.

This answer, though, begs further questions. Like…

[1] E.g. iiNet "Naked Home 1" ; Internode "Home Extreme Starter";
[2] See The Myth of Fibre
[3] Using ADSL2+ modems and speed settings

"If I can get 12Mbps for $50 a month today, why does Australia need to spend another $10 billion, with $4.7 billion coming from the public purse?"

That's a good question and given iiNet and Internode's results, there's a strong argument that public funds should be focussed on areas that can't get the required speeds, not spent duplicating or replacing services already delivering them.

The legacy of seven or eight years of Telstra offering no more than 1.5 Megabits per second to consumers, the Bureau of Statistics data (http://www.abs.gov.au/ausstats/abs@.nsf/mf/8153.0/) shows that more than 50% of DSL customers currently elect to use a broadband speed below 1.5 Megabits per second.

Clearly more than half of existing DSL customers are either constrained by price or - neither want nor need higher speeds. It is clear to me then, that any future replacement broadband network would need to offer lower prices than the existing network, to avoid the take-up of high speed broadband services actually going backwards, not forwards, in the future.

Another question might be…

"Is the FTTN going to provide me with the option of a $50 plan?"

This looks being one of those 'That depends..' answers. Telstra doesn't seem to think that'll be possible. Details of an FTTN proposal from Telstra were not published by Telstra, however, media articles have suggested wholesale access charges from Telstra ranging from $58 (512kbps) to 'well over' $100 per access per month[4].

Let's just say that again –

Australia invests $10 billion so that customers will have to pay more to buy the same services they can get today… yeah, right.

The alternative to Telstra's offer is provided by G9's FANOC. Their undertaking to government certainly indicated[5] an access cost of less than $27 for 12Mbps, so $50 retail looks possible, but why build that FTTN in place where the service is already available at that price?

Questions, questions, questions.

Some facts are available, though. In 2008, half of Internode and iiNet's Sydney customers are getting 12Mbps and only paying around $50 a month for it. There is a poultice of suppliers in the market and an array of choice. That doesn't look like a problem needing a $10 billion solution.

---

[4] The Australian, June 8, 2007. "Telstra ultimatum on fibre"
http://www.australianit.news.com.au/story/0,24897,21868192-16123,00.html

[5] Schedule 3 pricing model, FANOC SAU.

A new network sponsored by the Australian government has to improve on today's offerings. Not duplicate it.

- Improve on the retail price;
- Improve on availability;
- Improve on reach;
- Improve on choice.

They must ensure the cash goes to delivering services to the bush, eliminating RIMs and pair-gain systems in cities, making sure those missing out today get the 12 Mbps already possible. Ensuring customers have a choice of suppliers, wherever they are.

Internode and iiNet don't have the political influence or financial clout of some of the other players in this industry, but they know if you focus on the customer and service delivery, there's a lot that can be done for consumers right now. In 2008. They know, they're doing it.

The 'heat map' shown above is available for download at

http://www.iinet.net.au/iinetwork/bb2_speeds.html

and

http://www.internode.on.net/heatmap/

About iiNet - www.iinet.net.au

iiNet is one of Australia's Internet service pioneers, having begun in Western Australia in 1993. Now Australia's third largest ISP, iiNet has built a reputation for providing innovative, quality and value Internet products, and friendly 24-hour customer service and support.

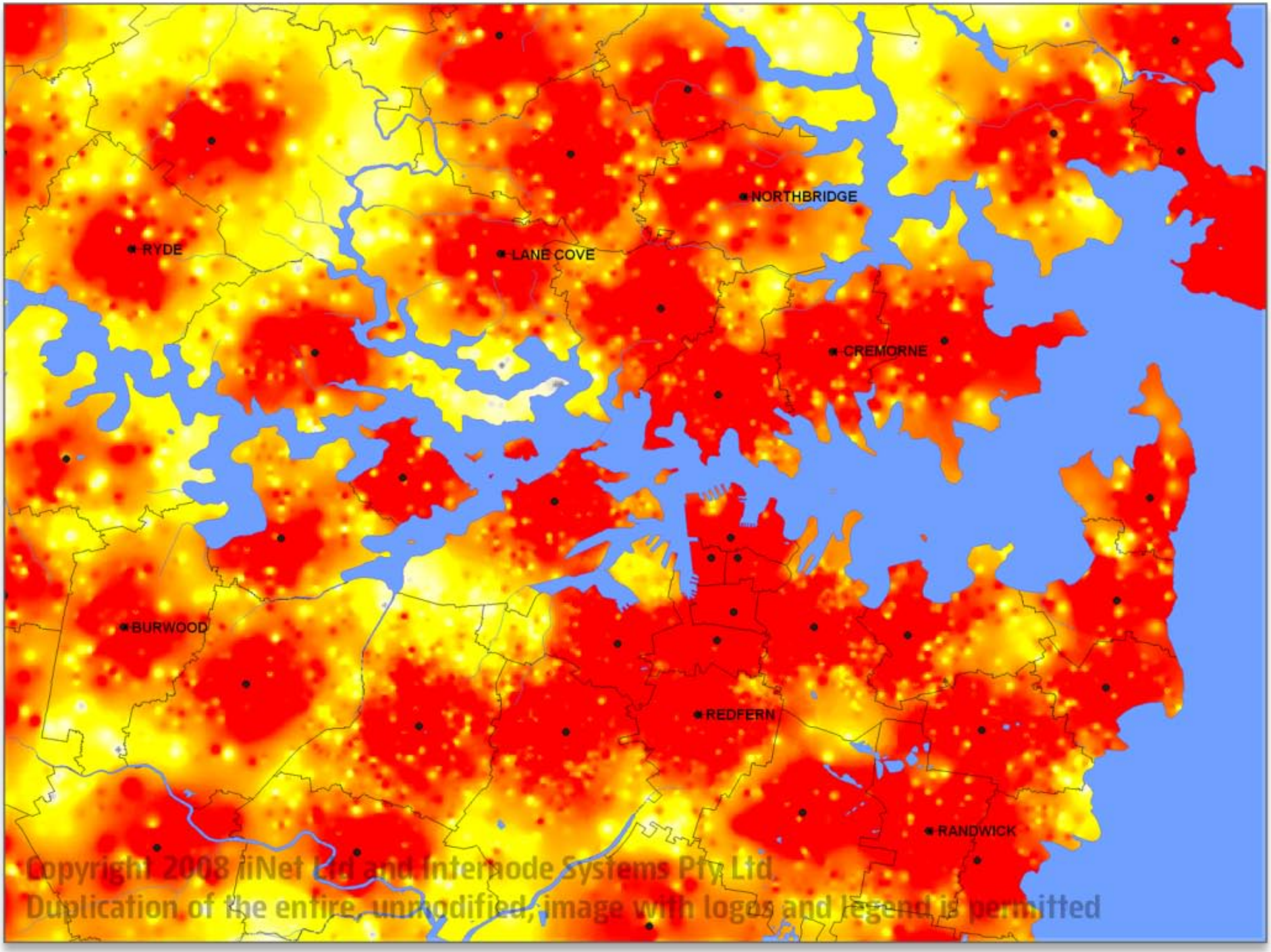
For further information please contact:
Stephen Dalby, Chief Regulatory Officer, iiNet Ph: (08) 9213 1371 sdalby@staff.iinet.net.au

About Internode - www.internode.on.net

Internode is a first tier IP carrier committed to using broadband technology to redefine the national telecommunications environment. The Australian-owned company is a trailblazer that delivers broadband services to individuals and businesses throughout Australia.

For media assistance, call John Harris on (08) 8431 4000 or email jharris@impress.com.au

Combined ADSL2+ Speed Distribution - Sydney



iinet
connect better

Internode

Legend (Mbps)

- 14 and above
- 12
- 10
- 8
- 6
- 4
- 2
- 1 and below

customer percentile max down (Mbps)

10%	19.4
20%	17.3
30%	15.3
40%	13.2
50%	11.9
60%	9.6
70%	7.5
80%	5.7
90%	3.8

sample size > 16,000

Access Seeker Requirements

For the Expert Panel Assisting the Minister for Broadband, Communications and the Digital Economy

30 March 2008

iiNet Ltd

iinet
connect better

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Introduction and Background

The Government's pre-election policy stated that building a national broadband network is a major and historic step and one that is critical for Australia's future economic prosperity.

Critically, the network's construction is not only an historic step, but a major and historic opportunity to set in place an access and regulatory regime that will secure the future growth, innovation and competition in the information, communication and telecommunications sector.

The Government's pre-election policy, New Directions for Communications – Building a National Broadband Network, correctly identifies the relative parlous position of Australia's access to broadband.

It also correctly identifies the benefits of a more extensive and comprehensive broadband availability. In doing so, it highlights that the lack infrastructure investment has left many Australians with no access to fixed line broadband.

While this in part is true, the level of access to high-speed broadband and expansion of the Australian ICT industry has also been driven by the lack of genuine open access to the current infrastructure.

Notably, where genuine open access is available, either due to competition or enforced by determinations of the Australian Competition and Consumer Commission (ACCC), many Australians have access to broadband at higher speeds than proposed by the Government's National Broadband Network policy.

For example, iiNet can provide ADSL2+ to more than 90 percent of metropolitan Australians as a result of its own infrastructure investment in more than 300 exchanges and competitive access to other existing infrastructure.

In considering the implementation of the National Broadband Network, the Government and its advisers must recognise and consider this important fact: "many Australians have been left with no access to fixed line broadband" not just because of a lack of infrastructure investment, but also because of a lack of genuine open access to existing infrastructure and a regulatory regime that promotes, encourages and protects competition.

In this context, the Government's commitment to "construct a genuinely open access national fibre to the node network and put in place regulatory reforms necessary to facilitate such an investment" is welcomed

Additionally, the Government's commitment that a pre-requisite for all proposals made under the policy must provide genuine open access to bottleneck fibre to the node infrastructure is also welcomed.

As noted in the pre-election policy, genuine open access must require equivalence of access charges and full scope for access seekers to differentiate their product offerings by allowing the customisation of

access speeds, quality of services and contention ratios.

Further, the recent High Court judgement in Telstra Corporation v The Commonwealth (6 March 2008) reinforces the critical importance of setting in place a statutory access regime in advance of awarding any consortium the rights to build the National Broadband Network. That statutory access regime must be directed at expressly "promoting … competition in the telecommunications industry generally and among other carriers" and seeks to achieve this goal by "giving each carrier the right … to obtain access to the services supplied by other carriers".

The future access and regulatory regime will be a key determinant of the ability of the Federal Government to successfully implement its election policy and deliver on its commitment to put "Australian back into the fast lane of the information super-highway."

The following submission is designed to provide the Government's Expert Panel with specific and critical factors for its consideration as it develops the Request for Proposals documentation related to the National Broadband Network.

It based on the extensive experience of investing in, and delivering, high-speed broadband to hundreds of thousands of Australians with existing and new infrastructure and under the current access and regulatory regime.

1 Executive Summary

The opportunity to provide input to the Government's plan to move to a next generation telecommunications network is an opportunity to address some of the shortcomings inherent in the existing regulatory regime.

The general principles that need to be applied to the regulatory improvements are those that have been in place for some time and expressed by government policy:

- Promoting competition;
- The long term interests of the end user.

Additionally, these improvements should address obvious deficiencies in the powers provided to the regulatory authorities pursuing these principles. These include:

- The establishment of reasonable access terms;
- Broadening the scope and improving the efficiency of arbitration processes;
- Reducing the ability of parties to 'game' regulatory processes;
- Eliminating conflicts of interest between commercial interests and regulatory compliance.

Getting the regulatory settings right will ensure consumer interests are promoted and the benefits of competition are realised in months rather than decades

Getting the regulatory settings wrong at this significant opportunity will lead to a reduction in competition and a return to higher prices, less choice and reduced prduct innovation.

Deployment of a new telecommunications infrastructure provides a unique opportunity to achieve a true open access regime, unsuccessfully pursued by Australian Governments since 1991.

Getting the access framework right, so that markets can operate efficiently is the key. Failing to address the known deficiencies while changing the architecture of the network platforms will destroy the competitive gains achieved to date.

This is an opportunity to not only fine tune existing regulatory settings, but also consider innovative approaches to service delivery. With multiple providers and any-to-any connectivity comes an ability to create competitive tensions on a geographic basis.

Discrete State, Regional or Metropolitan licences could be considered in addition to a full National solution. This geographic approach is

already a matter of fact on a global scale and is not technically constrained. Considering new models to create additional competitive tension also has the potential to develop niche markets. The current national approach was conceived at a time when telephony network constraints were an over-riding consideraation. The changed nature of telecommunications featuring IP based networks combined with Peering providers should encourage alternative approaches.

2 Access Seeker Requirements

By definition, these requirements relate to the wholesale layer of service provision. That is, they describe the broad requirements for improvements in the relationships between the rights and obligations of the network owner/operator (Access provider) and those organisations purchasing access (Access Seekers). This access being purchased to services and or facilities for the creation and eventual sale of retail products and services to end users.

They do not relate to the sale of retail products and services to end users.

They focus on the requirements for an orderly and managed migration from the current generation network (CGN) to a next generation network (NGN).

3 Next Generation Network Frameworks

3.1 Regulatory Framework

The existing regulatory regime has a number of shortcomings which are easily identified by parties wishing to 'game' the regime. This has resulted in, for example nine years of dispute over the cost of the ULL declared service, with no conclusion in sight for even the most basic commercial term – the price.

This has limited progress in the deployment of ULL services and presents a hurdle to investment for competitive entrants. Investors see the uncertainty of the regime, the inability of the regulator to conclude the process and the blocking power of the network owner as significant barriers to enter into the market.

These shortcomings militate against Government competition policy.

3.1.1 **Recommendation**

All parties must have incentives to conclude negotiations quickly and reasonably priced, efficient access provision must be pursued as an attractive commercial proposition by the access provider (rather than a regulatory obligation). This is best achieved by removing the conflict of interest between access provider obligations and retail commercial imperatives. Structural separation of the access provider from a retail business unit is essential.

3.2 Conflicts of interest resolution

The existing network owner is seriously conflicted. It is required to by law to provide network access to its retail competitors. It is also required by law to maximise the return to its shareholders.

It is expected to do this in the long term interests of all end users (not just its own customers).

It views these obligations as mutually exclusive and is forced to choose between the two.

It is unreasonable to expect a listed corporate entity to put the interests of its competitors, the broader industry or government policy ahead of its fiduciary obligations to its shareholders.

The letter of the current law is loose and provides many opportunities to avoid efficient access provision or policy compliance. Conflicts of interest cannot be resolved by notions of good behaviour or the expectation of good will between commercial opponents.

Accounting separation and operational separation requirements do nothing to address the conflict of interest issue, in fact they may be seen to highlight the conflict by reporting the differences.

3.2.1 Recommendation

Structural separation between the access provider and any and all access seekers will resolve this conflict of interest. A network owner or operator who is prohibited from retailing services to end users and licensed to sell only wholesale access will be incited by the commercial success of that wholesale provision, not by retail market share.

3.3 Price setting

There are no current price setting arrangements in place. Instead, parties are expected to negotiate commercially. If negotiations break down, the ACCC has the power to arbitrate, those determinations being binding, but only on the parties to the dispute. Any other parties wishing to obtain the same result must negotiate/arbitrate separately and serially. Binding arbitrations between parties A and B have no flow-on to an identical dispute between parties A and C or B and C.

The current 'Negotiate – arbitrate' process is dysfunctional. It is based on the premise that two parties (Access Provider and Access Seeker) will negotiate in good faith to come to a commercial settlement for the provision of services.

Negotiation requires two parties. If one of the parties disagrees with the concept of providing access to its competitors, there is no incentive to participate in discussions on the terms of that access.

The 'arbitrate' step is designed to be a fall-back position in the event that parties cannot agree on an aspect being negotiated. In the current environment, no negotiation takes place, so the arbitration step is employed as an unsatisfactory substitute for a bilateral talks. The Arbitration process, as it stands, is subject to ACT and ADJR oversight. Given the starting point is that one party does not want to be in negotiations to start with, the arbitrations are taken to their maximum time-frames and then appealed.

The ACCC website listing current Access Disputes shows 32 disputes notified to the ACCC for arbitration and unresolved at 26 March. Telstra is a party to all those listed. There are only 17 Disputes *published* on their website by the ACCC as having reached a determination.

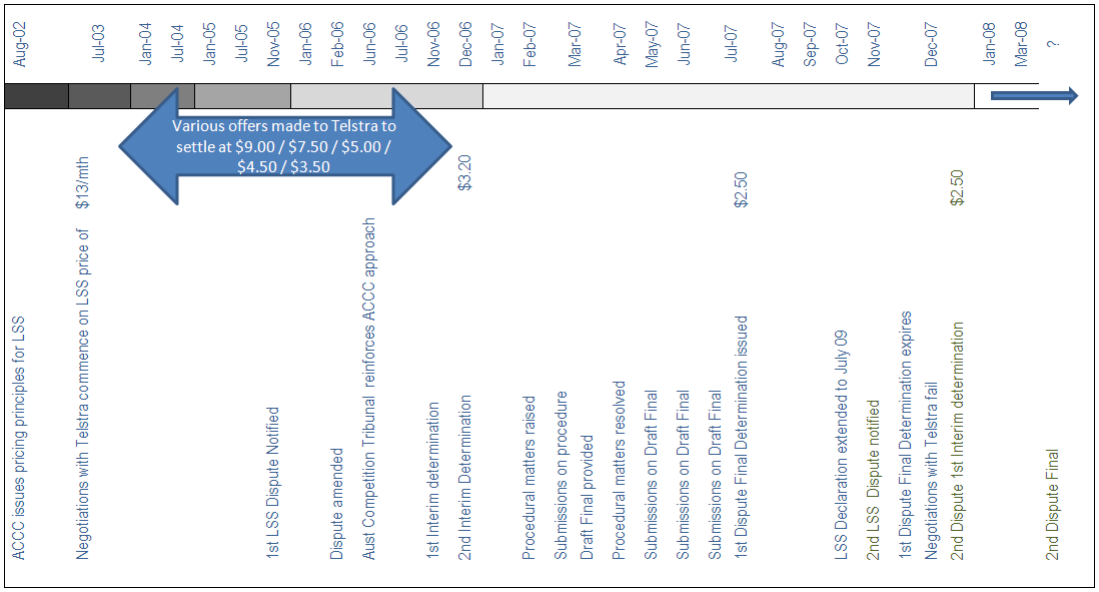
As an example of the time required to reach a conclusion using the negotiate / arbitrate method, we can use the Chime Vs Telstra LSS

dispute[1] to illustrate the time frames.

Negotiations commenced with Telstra in the middle of 2003, at which point Telstra's 'rack rate' for LSS was $13.00/month. After failed negotiations and a lengthy arbitration process, a Final Determination was handed down by the ACCC in 2007 which expired on December 31 of that year.

This means that even when a dispute is 'finalised', it's not.

A 2nd LSS Dispute was notified by Chime in November 07 and is ongoing.



The ULLS was initially declared in 1999. In 2008, approaching the 10th anniversary of ULLS declaration, there is still no resolution to the price that should be charged for this regulated product.

The current process is therefore clearly not a suitable method for establishing prices in a dynamic market with hundreds of participants.

3.3.1 Recommendation

In the event that the negotiate / arbitrate model is to continue, the minimum change required would be for a single arbitration to automatically be applied to all similar arbitrations brought during the life of the determination. An arbitration determination would, therefore, have the power of price setting for the industry at large.

This concept should be broadened to cover any determination relating to a dispute on access provision as price is not the only basis for dispute or in need of arbitration.

[1] *Chime/Telstra LSS final determination - ACCC published reasons August 07.*

3.4 Access Terms

The current wholesale DSL environment in Australia provides end-user services at a variety of speeds, usually without any form of Service Level Agreement and an aggregation or backhaul service which is billed separately and with various terms and conditions attached. Artificial constraints are applied to line speeds, average throughput, and backhaul configuration.

ISPs operating their own networks do not have these constraints applied externally. These are decision that may choose to make as it fits their business model.

3.4.1 **Recommendation**

Access seekers must have the ability to operate the services delivered over the NGN as if they were their provided over their own networks. Limits on throughput, line speeds (both up and down), contention ratios, and any other network characteristics must be at the discretion of the access seeker.

3.5 Aggregation

The cost of aggregation should be embedded in the end user access price paid by access seekers.

The NGN should be capable of allowing access seekers to use the full line speed of each and every end user. This means that the aggregation network must be non-blocking and un-contended.

The minister has set a minimum bandwidth for each end user of 12 megabits. This should also apply to the aggregation network and there must be at sufficient capacity from each Node per end user back to the point of interconnection with the access seekers.

Unbundled aggregation has been one of the major commercial drivers encouraging Internet providers to deploy competitive DSLAM networks in Australia.

The cost of providing the backhaul service from a DSLAM to a service provider's network is largely fixed at the cost of obtaining dark fibre from the DSLAM site. The actual capacity of a single core of dark fibre already exceeds the total downstream capacity of a rack of VDSL2, let alone ADSL2+ DSLAMs, so the cost of operating the backhaul is essentially fixed.

To put this in commercial terms, the operating expense per megabit for backhaul of metro area DSLAMs is around $5 per megabit or about one twentieth the cost of Telstra's current wholesale charge. This cost will only go DOWN on a per megabit basis as demand increases because the operating cost is fixed, regardless of capacity used.

3.5.1 **Recommendation**

Embedding the cost of aggregation into the end user access price for access seekers is the simplest way of ensuring that:

- Access seekers can offer the same retail prices for regional and rural users
- True broadband applications are affordable on the network

3.6 End user access

Access costs are not that variable. The price an access seeker pays should ideally be fixed. (Usage costs in Australia may vary according to where data is sourced, but access is by and large fixed).

We have the situation today where competitive service providers running their own DSLAM infrastructure are able to offer a wide variety of data services from their DSLAM to their end users.

They can offer a variety of data speeds (depending on copper loop length):

- ADSL 1: 1Mbps/8Mbps
- ADSL 2: 1Mbps/12Mbps
- ADSL 2+: 1Mbps/24Mbps
- ADSL 2+ Annex M: 2.5Mbps/24Mbps

They can offer a variety of services

- PSTN over analogue, direct connected telephony
- PSTN over ATM via the DSLAM
- Voice over IP via the DSLAM
- Voice over IP via the Internet service
- Access to private IP data networks
- Access to private ATM data networks
- Access to multicast IP for delivering audio, video and data
- And even plain old Internet service

They can do this with no real incremental cost of backhaul or access ports because this is already in place. If one service is provided, any or all services can be provided as long as bandwidth is available on the copper pair from the DSLAM to the end-user.

3.6.1 **Recommendation**

Any NGN must provide access seekers with a platform capable of the above AND MORE at a cost the same or less than current costs to provide these services.

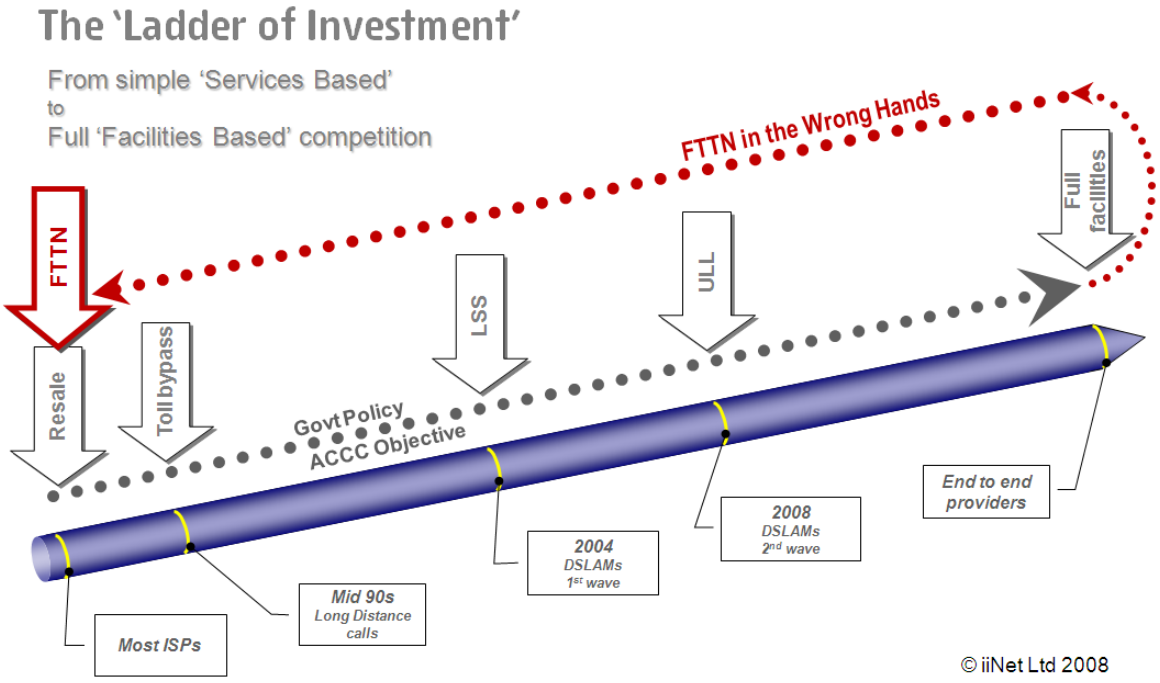
3.7 *Access versus Resale*

In the current Australian regime (and in other jurisdictions), the concept of a 'ladder of investment' encourages new entrants to previously monopoly markets. It suggests that a new entrant can enter a market with limited investment, gain some market share and then expand that market share by targeted investment in infrastructure (which offers efficiencies and improved profitability), proceeding, over time, to a point where the new entrant has comparable infrastructure to the incumbent.

In the telecommunications market, this has been illustrated by new entrants investing initially in sales and marketing (call centres, billing systems, CRM, etc) and re-selling fully developed retail products and services purchased form others.

A next step has included the installation of voice switches, transmission systems and interconnection facilities. Later, data switches, DSLAMs, and access networks have been deployed (see below).

The introduction of a monopoly NGN platform brings to an end most of this investment ladder and leaves only those on the top rung with a path for investment.



3.7.1 **Recommendation**

Opportunities for competitive investment in the NGN must not be excluded.

Legitimate infrastructure owners must be either compensated for stranded assets; or Allowed to retire the assets in line with reasonable investment returns or product life-cycles;

3.8 Unbundled services

Customers of some Service providers (who do not currently force a bundle of telephony and Internet) will be forced to change providers as they find themselves having to choose a new provider. Under the new regime, they could be obliged to take both components from the same provider. Retailers will recognise this and will be able to force customers to pay more for the bundle than the customers currently pay for the sum of the parts, because there will be less competition.

Further, forced bundling of non-regulated services may exclude end users from accessing Pay TV entirely, if they choose a competitive service provider. This is the case in France in 2008.

3.8.1 **Recommendation**

The NGN framework must allow -

- Delivery of multiple streams (PVCs or VLANs) of service to each end user
- Delivery of services by multiple service providers to each end user
- Delivery of multicast IP and ATM to each end user
- Delivery of a basic PSTN access bearer to each end user

Each of these services must be able to be connected to different service providers. End users must be able to choose between providers for each service.

The ultimate driver for these connections must be the end user who must have the right to freely choose a service provider as is the case today.

3.9 Transition period CGN to NGN

a) Network operators

Under the current regulatory regime, in line with the 'Ladder of Investment' concept and synchronised with government policy, many investors have developed infrastructure at great cost of both time and resources.

3.9.1 **Recommendation**

- Transitions from CGN to NGN must be possible without significant outages or compulsion;
- A no-disadvantage test must be satisfied prior to services being migrated to NGN (E.g. telephone numbering remains the same;

service performance and price must be equal to or better than the service being replaced);

- Interconnection between CGN and NGN must be developed to allow a continuation of any-to-any connectivity.

b) End-users
In addition the principles above, end users are particularly vulnerable to sweeping technology changes which have the potential to render their own current hardware investment worthless. Hundreds of millions of dollars have been invested by end users on ADSL Customer Premises Equipment (CPE) in the last two years alone. Business users must be allowed to continue to depreciate this equipment for years to come.

3.9.1.1 Recommendation

A guiding principle for an NGN must be:

- End users must be able to use existing ADSL CPE for at least five years from the commencement of an NGN; or
- The NGN builder must replace and configure the ADSL CPE of an end user acquired within five years before the commencement of an NGN such that the end user can achieve a transition from CGN to NGN without outages.

3.9.2 Exemptions

Consideration must be given to end users who are currently serviced by technology other than ADSL over copper pairs. Numerous end users are currently serviced by dial modems on PSTN or ISDN. Other users are in estates serviced by Fibre to the Home from a variety of carriers, often with no access to Telstra copper or competitive services. Many rural users receive Internet service via wireless using proprietary protocols, WiMax or 3G.

These customers must not find themselves casualties of a hasty deployment of an NGN

(Note: This is not meant to be a complete list.)

3.9.2.1 Recommendation

Technical and commercial provisions for exemptions from forced migrations to the NGN must be incorporated in specifications.

3.10 Commercial Framework

3.10.1 Unbundling provisions

Functionally equivalent services (to that available pre-NGN) must be available to access seekers, in particular the maintenance of choice for unbundling of services. Economies of scale and innovation are not mutually supportive. Simple re-sale of services permits no product innovation, other than by the access provider who is remote from the end-user.

Current arrangements allow unbundling at a number of points of access. New arrangements must not reduce these opportunities to add value for consumers or the development of new products and services overlooked or decided against by an access provider.

Forced bundles of telephony, Internet and Pay TV do not fit the existing ladder of investment and do not reflect the current competitive landscape. There is no natural requirement to force the bundling of different classes of service in an NGN and neither is there any natural requirement to block access to certain classes of service. In particular, excluding competitive access providers from providing telephony or Pay TV would be a significant reduction in competitive opportunity since these are services which current infrastructure operators are able to deliver via their own equipment over ULL copper pairs today.

3.10.1.1 Recommendation

An NGN must support:

- Delivery of multiple streams (PVCs or VLANs) of service to each end user
- Delivery of services by multiple service providers to each end user
- Delivery of multicast IP and ATM to each end user
- Delivery of a basic PSTN access bearer to each end user

Each of these services must be able to be connected to different service providers. End users must be able to choose between providers for each service.

The ultimate driver for these connections must be the end user who must have the right to freely choose a service provider as is the case today.

3.10.2 Transparent Ts & Cs

Transparency in the provision of (what will effectively be) monopoly access services is essential to reduce disputes and provide for accountability. It assists in driving down costs and encourages access seekers to develop innovative products on the platform.

There are two types of barrier in the current environment and they would naturally be transferred into an NGN world if the Ts &Cs remain unchecked. Financial barriers include Access Seekers being forced to wear disproportionate commercial risk in the form of unnecessary security deposits, onerous payment and trading terms and a loss of commercial security over their own customers.

Additionally, the instability of service brought about by the Access Provider retaining the right and capability to withdraw wholesale service from access seekers with minimal notice, leaving access seekers without recourse or the ability to provide alternative services for their end users.

3.10.2.1 Recommendation

Access terms and conditions must be submitted to the regulator in the form of access undertakings, they must be transparent, comprehensive, complete and available for publication.

3.10.3 Dispute Resolution

Dispute resolution is a point of failure in the current regime.

3.10.3.1 Recommendation

Any access dispute brought by any access seeker should be accepted by the regulator as an industry dispute. Any outcome of arbitration by the regulator should be applied to all participants seeking or providing access under the NGN.

This should not be limited to price. Where an access undertaking omits terms or conditions required for effective negotiation, the regulator should identify the omissions and facilitate either a negotiated outcome with a fixed timeframe of six months or provide a binding determination itself.

3.10.4 Product definitions

The debate about FTTx has been conducted within very limited parameters. The FTTx by definition has the potential to de-commission the existing copper customer access network that delivers a range of products and services other than broadband.

The NGN must allow the continuation of, or the migration to, functionally equivalent services currently used by customers in residential, business, corporate and government markets for a range of services such as secure ATMs, corporate data networks, Eftpos terminals, credit card authorisation, PABX networks, trading networks and so on.

Customers have systems and equipment installed with specific interface standards that may not be compatible with an NGN. An NGN then, has the potential to strand the investments of millions of

customers, not just access seekers.

3.10.4.1 Recommendation

Any new network infrastructure must allow the continuation of existing communications products and services as well provide for managed migrations, when and if required.

3.10.5 No disadvantage test

Services currently provided on the CGN are provided under a range of terms and conditions, developed over time.

3.10.5.1 Recommendation

The NGN must be required to offer terms and conditions at no disadvantage to consumers over those applying to any services being replaced.

3.10.6 Residential

a) Above all, residential users are price sensitive. They buy the service they can afford and simple observation of cars on the road demonstrates that there is a wide spectrum of affordability.

   There remains a large group of Internet users in Australia who for reasons of affordability, access or frequent relocation access the Internet via dialup modems. Testing with various FTTx technologies has shown that dialup modems are not necessarily compatible with the network.

b) Regardless of the Minister's goal of 12 megabits access speed in each direction, ISPs will doubtless seek the ability to implement some limits in order to protect their networks from large quantities of peer to peer (P2P) traffic.

3.10.6.1 Recommendation

a) Consideration must be given to how these people will access the Internet in an NGN world.

   (Commercial models in other countries (such as Germany) where end users pay a fee to the access network provider and then acquire Internet services from one of the many service providers available on the access network. Such models allow end users to obtain access to their service provider, even when they move house, without any interruption. This style of commercial access is unlikely to be proposed by a network builder who also intends providing retail service over the network but could easily be mandated by Government as a condition of building the network.)

b) This must be under the control of individual access seekers.

3.10.7 Business

Small business users do not limit themselves to the telephone or broadband access. Eftpos and other transaction systems must be maintained under the NGN with no additional cost to business users. Any other services such as alarm and other remote monitoring systems which are dependant on CGN infrastructure must be guaranteed continuity.

Health providers must be able to maintain the provision of emergency call services and other independent living aids for the aged, infirm and disabled.

3.10.7.1 Recommendation

Service continuity must be maintained.

3.10.8 Corporate & Government

Larger commercial networks bring together end users from around the entire planet into complex, blended networks. Access to the network is frequently provided in homes and the premises of contractors, vendors, customers and service providers. These networks are usually private and secure.

3.10.8.1 Recommendation

This ability must be maintained and under the control of individual access seekers.

3.10.9 Law enforcement

Service providers are currently obliged to provide interfaces for lawful interception.

3.10.9.1 Recommendation

All provisions for lawful interception must be maintained.

3.11 Operational Framework

3.11.1 Customer transfers

Customers must be able to choose providers or service types and be able to switch without penalty.

Under the current network arrangements, there is no consistency of transfer arrangements between infrastructure or service types. Number portability arrangements vary as does platform portability.

Some existing transfer arrangements are non-existent and customer transfers between providers or even different access arrangement with the same provider may be accompanied by enforced outages which create barriers to switching. Some customer transfer processes are voluntary and some are not.

3.11.1.1 Recommendation

A fully automated and compulsory customer transfer regime must be put in place in order to provide customer choice and drive competition. This transfer regime must incorporate CGN to NGN transfers as well as provider to provider transfers.

3.11.2 Infrastructure Builds and deployment

The current access regime allows the network owner to dictate the pace that competitive services are deployed. Restrictive work practises are the norm and infrastructure deployment and interconnection is progressed, delayed or blocked without negotiation and at the whim of the dominant access provider.

There is no third party auditing, no justification for unilateral decisions and no appeal.

There is no incentive for any other approach by the incumbent.

3.11.2.1 Recommendation

Structural separation between the network owner or operator and any retail business entity must be a pre-requisite condition.

3.11.3 Facilities access

The current access arrangements to exchanges and other facilities are not transparent and are unbalanced in favour of the incumbent.

The access points and points of interconnect under the proposed NGN are not clear.

Any facilities access arrangements under NGN need to be transparent, fair and equitable for all parties.

3.11.3.1 Recommendation

Structural separation between the network owner or operator and any retail business entity must be a pre-requisite condition.

3.12 Conclusions

3.12.1 Structural Separation between access provider and access seekers must be the starting point for the provision of an NGN that will outlast any government putting it in place

3.12.2 Dispute resolution should be streamlined and strengthened

3.12.3 Price setting powers should be incorporated into dispute resolution.

3.12.4 Customer transfer processes are essential and should include service provider to service provider as well as CGN to NGN

3.12.5 No Disadvantage test should preserve existing services and terms including -

- Security for aged and infirm
- Maintenance of service types
- Price performance compared to pre NGN services
- Bundling choices

3.12.6 Transitional arrangements are essential -

- Interconnection with CGN must be available
- Compensation for stranded assets must be incorporated for all existing asset owners
- Should not be enforced prior to five years from the commencement of NGN services in a given location.

3.12.7 Innovative licensing arrangements should be considered in addition to a single national network. This could include geographic network deployments servicing State, Regional or Metropolitan areas.

4 Supplementary information

4.1 Availability of high speed broadband

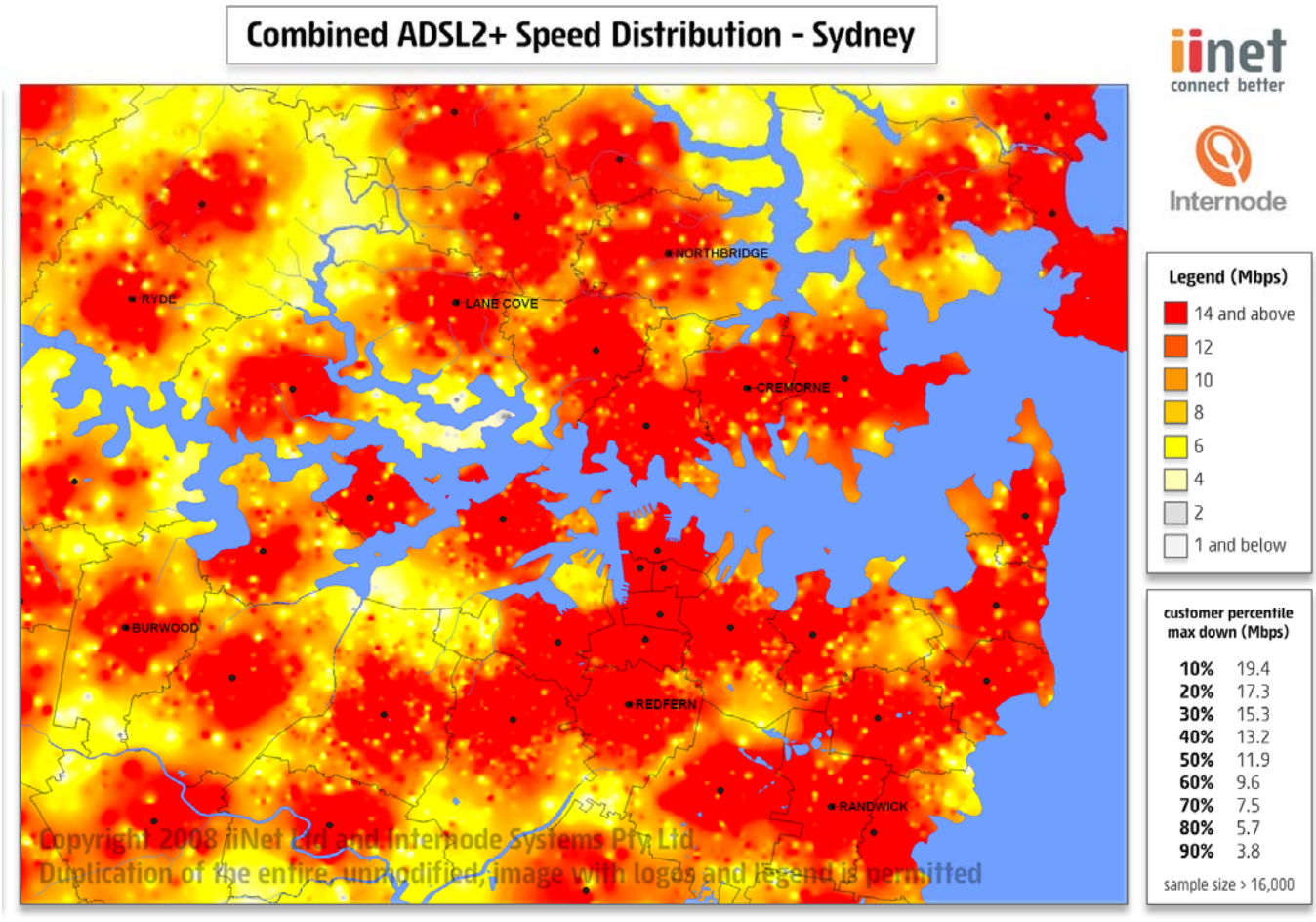
Much has been made of the need for high speed broadband with comments such as ‘deplorable’ and ‘sub-standard’ being used by some for their own agenda.

iiNet has often taken offence at such comments given that the generalisations made by those not that well informed ignore the fact that many companies, including ourselves, have made a successful business out of the provision of high-speed internet access since early in this decade.

We have pursued the construction of our own networks to ensure the delivery of the fastest available consumer grade services and this has resulted in a number of awards, including ‘Product of the Year’ in 2007 and ‘Carrier of the Year’ in 2008.

The Minister’s ambition to provide broadband to all Australians should not ignore that many Australians already have high speed broadband today.

iiNet teamed with Internode to sample 16,000 customers services to produce the following ‘heat map’ using colour coding to illustrate the speeds available to consumers across Sydney.



The red areas indicating where speeds achieved on the current network exceed 12 Mbps. In fact 50% of all Internode and iiNet customers in the sample (16,000 customers) already get 12Mbps.

See *What Price FTTN?* for the associated press release accompanying this heat map.

4.2 ACCC commentary on the FANOC (G9) suggestions

In handing down its draft decision on FANOC's Special Access Undertaking in relation to the Broadband Access Service in December 2007, the Australian Consumer and Competition Commission (ACCC), noted it was not its role to determine the type of FFTN network or all the measures necessary to ensure 'open access'.

Importantly it did, however, provide some general guidance on its thinking about the operation of a future FTTN network which, in most respects, provide a firm foundation upon which the Expert Panel and the Government should rely in its consideration of the future open access and regulatory regime.

Pricing

The ACCC was generally comfortable with FANOC's proposed long-term approach to pricing. It stated that it would provide a high degree of regulatory certainty for significant new investments, and noted the initial prices for the first three year access period may be in the appropriate range.

Vertical Separation

The ACCC also considers that a vertically separated ownership model could reduce incentives for the access provider to discriminate between downstream users of the access service and, therefore, facilitate strong and effective competition between access seekers in retail markets. Where such an ownership model is in place, the ACCC considers the need for regulatory oversight of non-price terms and conditions of access, in particular, could be relatively low.

Access issues

The ACCC indicated concerns that the SAU gives FANOC too much discretion to determine access prices over the 15 year undertaking period without sufficient regulatory audit and review of the key inputs in the pricing methodology, including actual costs, demand forecasts and the depreciation profile. In addition, the ACCC was concerned that FANOC has too much unconstrained discretion in relation to determining non-price terms and conditions of access, including in relation to introducing or withdrawing BAS products, varying the service specification and setting notice periods for network changes over the life of the SAU.

It said it was not satisfied that the proposed ownership and governance structure supports the significant discretion reserved to FANOC to determine price and non-price terms and conditions of access for 15 years.

In relation to the BAS service specification, the ACCC's draft view was that FANOC has addressed many of the needs of a low level, bitstream access service over an FTTN network, although the it has some concerns as to whether the proposed approach to voice services is

appropriate, at least during the initial transition period.

ACCC General Guidance On The Implications Of An FTTN Network

The ACCC did provide guidance in its report on what would be expected of third party access on any FTTN broadband access network in order to promote the long-term interests of end-users.

The ACCC noted that all FTTN network upgrades would be likely to exhibit essentially the same bottleneck characteristics over the 'last mile' as Telstra's existing copper loop access network.

Appropriate terms and conditions of third party access to the bottleneck will be critical for competition in downstream retail communications markets and to promote the long-term interests of end-users, including Australian households and businesses.

It stated the terms of access should give network infrastructure investors the right incentives to invest and to recover their costs, with an appropriate return on risk, and also give access seekers the ability to invest in their own businesses, to compete and to innovate.

It said that as many of the same third party access issues are likely to arise regardless of how an FTTN broadband access network is built, or by whom.

Third Party Access To A FTTN Network

The ACCC considers that the lower the 'layer' in the network at which access is granted and the closer it is to the basic physical infrastructure that makes up the bottleneck, the greater the ability of access seekers to control their own costs and supply chain, differentiate service offerings, innovate and improve service quality.

The ACCC said that an approach to regulation that provides access seekers with greater control over their own business and products, to the extent that it is economically efficient, is likely to promote competition, innovation and investment in new services, and be in the long-term interests of Australian end-users.

Currently these requirements are met by access services such as the unconditioned local loop service (ULLS).

An FTTN access network upgrade is likely to make the current use of unbundled access to the copper loops via the ULLS more difficult, if not impossible. The ACCC expressed no view as to whether a ULLS service should continue to be available after an FTTN access network is deployed.

Regardless of the future approach to the ULLS, the ACCC says it will be possible to offer an access service of some kind over the bottleneck. This could be some form of bitstream access service. The access service should be as close to unbundled access to copper as is feasible and give the access seeker as much control as possible over its own customer traffic. Regardless, it is the ACCC's view that an appropriate approach to a ULLS replacement access service over an FTTN access network would normally include the following:

A bitstream access service over the bottleneck, at as low a layer within the network as feasible, so as to give the access seeker as much control as possible over its own customer traffic.

Access prices that reflect efficient costs (whether actual or estimated) and give investors a return that reflects their investment risk.

Non-price terms and conditions of access that meet minimum quality of service standards and do not discriminate anti-competitively.

It notes that a smooth migration to the new services for current access seekers and their customers would also be critical.

Bitstream Access Service

The ACCC says a future bitstream access service would need to be at a much lower level in the network than a wholesale xDSL service.

If end-users are to reap the benefits of next generation broadband, access seekers need to be able to directly control their own customer traffic so they can innovate on services and applications and avoid simply reselling the access provider's product.

The user of a wholesale xDSL service has little control over the service and is often able to do little more than add its own marketing and call centre. By contrast, the proposed replacement for ULLS should be designed to give access seekers as much control as possible over their own customer traffic.

The ACCC notes that where the network owner is vertically integrated and has substantial market power in the retail market, a service which gives access seekers a lot of control over their traffic is also important to restrict the ability of the network owner to discriminate against access seekers. Therefore, the service specification of a bitstream access service is critical to promote competition and the long-term interests of end-users.

The ACCC stated that a bitstream access services should meet the following criteria:

A Layer 2 bitstream access service, which may be offered at a variety of speeds but should include a product that is not throttled as well as a product that is symmetric to the extent the technology permits. Products should be available to all access seekers on a non-discriminatory basis.

A service (whether the bitstream service or another service) that allows access seekers to provide a voice service.

Points of interconnection as close to customers as is appropriate and efficient, which in the first instance is likely to mean at or near existing local access switches and other points of interconnection for current ULLS and LSS products.

Interconnection protocols based on well-accepted standards for broadband, voice and, if applicable, video, which are sufficiently well-described to allow access seekers to design and build their own

interconnecting facilities.

Arrangements for access to buildings, shelters and facilities for interconnection.

Well-described and appropriate protocols for how packets are to be prioritized and handled.

Well-described and appropriate protocols for how congestion in shared network elements is to be handled.

Equivalent treatment of access seekers in relation to quality of service parameters such as jitter, delay and packet loss.

Interaction by access seekers with operations support systems.

No barriers to multicasting and IPTV by access seekers.

An appropriate process for amending service specifications in later periods as needed or desirable.

The ACCC considers a bitstream access service with a service specification that addresses these minimum elements would be likely to provide access seekers with sufficient flexibility and control over the access service to allow any-to-any connectivity and enable access seekers to compete effectively and make appropriate decisions in relation to the efficient use of and investment in infrastructure.

Therefore, the ACCC considers that such a service description would be likely to promote the long-term interests of end-users.

Access Prices

The ACCC says access prices should give network infrastructure investors the right incentives to invest and to recover their costs and an appropriate return on risk. If there is an increased degree of risk in an FTTN investment this should be appropriately reflected. At the same time, access prices should give access seekers the ability to invest in their own businesses, compete and innovate.

In making reference to the TSLRIC+ pricing methodology and it notes the Australian Competition Tribunal has endorsed TSLRIC+ in relation to historic, sunk networks.

The ACCC says it expects this approach may remain appropriate for such networks. However, it says there is no reason to rule out proposals for different pricing approaches, especially for new networks where efficient and prudently incurred actual costs can be known.

Therefore, it is unlikely to be possible to set an accurate schedule of fixed prices for any firm for much more than three years.

It may, however, be possible to set reasonable prices for the initial period and set a methodology for adjusting these prices over time. Such an approach is used in the gas industry, for example, where prices are set for the first year of an access arrangement period and prices for subsequent years within that period are adjusted according

to the pricing methodology contained in the access arrangement.

The ACCC states that any methodology for setting access prices to essential bottleneck infrastructure would require effective, independent regulatory audit or review of the key inputs and parameters in the pricing methodology in instances where the undertaking period is very long, regardless of whether the access provider is vertically integrated.

Further it states that while it may be appropriate for the ACCC to accept an access undertaking for a period of 15 years that contains initial period prices and a pricing methodology for setting subsequent access prices, the ACCC would need to be confident that the access provider would exercise its discretion in applying the methodology in an efficient and prudent manner.

It says this confidence could be achieved through providing the ACCC with a power to audit or review the key inputs in the pricing methodology (such as demand forecasts and forecast capital and operating expenditure) at appropriate intervals during the SAU period.

To be able to do this the ACCC notes that it would require new regulatory functions through an amendment to Part XIC of the TPA along the following lines:

If the undertaking provides for the Commission to perform functions or exercise powers in relation to the undertaking, the Commission may perform those functions or exercise those powers. If the Commission decides to do so, it must do so in accordance with the undertaking.

In relation to FANOC's initial prices the ACCC notes that if it is assumed that the cost of accessing Telstra's sub-loops is at the top of FANOC's estimated range of $5-15 per line per month, FANOC's proposed initial access prices for broadband services will be between $29 and $50 per month, depending on the speed of the service. FANOC has proposed to set initial prices below the long-term average and have prices rise over time to build the market. The ACCC's draft view is that this approach may be appropriate. As a result, these prices may be in the appropriate range of initial prices for a network of this type.

Smooth Migration To The New Services

The ACCC considers that a smooth migration to the new services is critical, rather than a new network builder necessarily continuing to offer all existing services. While the ACCC considers that existing services should be replicated under new networks where appropriate, there are some services that may need to be altered significantly or may not be replaced if an FTTN network is deployed.

The ACCC considers that it would not be in the long-term interests of Australian consumers and business end-users to block network modernisation indefinitely to avoid any form of disruption to existing carriers and carriage service providers.

The ACCC notes previous Australian Competition Tribunal decisions in relation to these matters accepting that access seekers do not have an

unlimited right of access to Telstra's ULLS, or the right to prevent network modernization.

It says carriers and carriage service providers investing in a dynamic industry would usually be expected to factor into their business plans the risk of technological obsolescence. In line with this, the ACCC notes its role is to protect the competitive process rather than specific competitors.

However, the ACCC considers it is appropriate for access seekers to expect reasonable notice and appropriate migration paths to ensure a smooth migration to the new services.

If access seekers' investments are subject to sudden arbitrary stranding on unreasonable grounds, incentives for access seekers to compete, invest in facilities and create innovative new services for consumers and business users would likely be reduced. This would not be in the long-term interests of end-users. Similarly it is in the interests of Australian consumers and business end-users that the industry has sufficient time to develop solutions to migrate important services (such as payphones, EFTPOS and voice) to an FTTN access network.

Again, it notes previous Australian Competition Tribunal decisions and says they [access seekers] ought not to be placed in a position where their substantial investments in infrastructure might be isolated and made redundant as a result of [the network owner's] timing and location of network upgrades. Such a situation is not in the long-term interests of end-users of the services provided to them by access seekers using the ULLS.

The ACCC notes that issues surrounding network modernisation are inherently complex.

It considers that such terms and conditions would more usually be determined by bilateral or multilateral commercial negotiation or by agreed operational procedures through self-regulatory mechanisms. It would be preferable that key network modernisation terms and conditions are not determined unilaterally by the access provider or solely through bilateral negotiations in circumstances where one negotiating party has little countervailing bargaining power. The ACCC may have a role where industry procedures prove insufficient.

4.2.1 **Acknowledgments**

4.2.2 **Contributions for this paper were received from**

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Media Release
National Broadband Network Will Fail Without Access Reform

1 April 2008 – The Federal Government's National Broadband Network will be a failure with customers paying more, fewer internet providers and a reduction in innovation and competition if the current access and regulatory regime is not dramatically reformed, iiNet Limited (ASX: IIN) said today.

iiNet today released its 30-page submission to the Panel of Experts advising the Government on building the National Broadband Network.

The submission says the Network's construction is an historic step, but also a significant opportunity to set in place an access and regulatory regime that will secure the future growth, innovation and competition in the telecommunications sector.

It says while the lack of infrastructure investment has left many Australians with no access to fixed line broadband, the level of access to high-speed broadband has also been driven by the lack of a genuine open access regime to the current infrastructure.

iiNet Managing Director, Michael Malone, said notably where genuine open access is currently available, either due to competition or enforced by determination of the Australian Competition and Consumer Commission (ACCC), many Australians have access to broadband at higher speeds than proposed in the Government's National Broadband Network policy.

"Through our own infrastructure investment, including DSLAMs in more than 300 exchanges, and competitive access to other existing infrastructure we can currently provide ADSL2+ to more than 90 percent of Australians living in metropolitan areas – often at speeds well in excess of 12Mbs," Mr Malone said.

"The future access and regulatory regime for any new network will be a key determinant of the ability of the Government to successfully implement its election commitment and 'put Australia back into the fast lane of the information superhighway.'

"Getting the regulatory settings wrong at this significant opportunity will lead to a reduction in competition and a return to higher prices, less choice and reduced product innovation," he said.

He said the recent High Court judgement also reinforced the critical importance of setting in place a statutory open access regime in advance of awarding any consortium the rights to build the new Network.

The submission also recommends the Government consider issuing discrete State, regional or metropolitan licences in addition to single national solution. It says considering new models may create additional competitive tensions as well as developing niche markets.

In addition, the submission argues that:

- structural separation of the access provider from a retail business unit is essential;
- the current 'negotiate – arbitrate' process is dysfunctional with some disputes still unresolved almost 10 years later;
- any future negotiate – arbitrate model must have a single arbitration automatically applied to all similar arbitrations;
- access seekers to any new Network must have the ability to operate the services with decisions on throughput, line speeds, contention rations and other access characteristics at their discretion;
- any new Network must provide access seekers with a platform capable of delivering at least the full range existing services, including ADSL, PSTN, VoIP and other data networks;
- these services should be available at the same or less than current costs;
- legitimate infrastructure owners must be either compensated for any stranded assets or allowed to retire their assets in line with reasonable investment returns;
- customer transition from existing services to any new Network service must be possible without outages, compulsion or disadvantage;
- a fully automated and compulsory customer transfer regime must be established to provider customers choice and drive competition;
- future access terms and conditions must be transparent, comprehensive and available for publication; and
- any new Network must allow for the continuation of, or the migration to, functionally equivalent services.

About iiNet

iiNet was established in 1993 and listed on the ASX in 1999, growing from a small Perth business into the third largest Internet Service Provider in Australia. The Company now supports over half a million dial up, broadband and telephony services nationwide, with revenues of over $240m, and proudly employs over 600 people in Perth, Sydney and Auckland.

iiNet's goal is to lead the market with the best Internet access products and then differentiate with genuine, plain speaking customer service. The company has its own high speed ADSL2+ network reaching around 4 million households across Australia, the largest Voice over IP network in the country, and is delighted to have led yet again with Naked DSL, recognized by PC User Magazine as the 2007 Product of the Year.

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From: Steve Dalby
Sent: Thursday, 15 May 2008 3:12 PM
To: 'Luke Coleman'
Subject: Let's keep the Vogons off the 'Expert Panel'

Luke,

One of the many outstanding items for the NBN RFP is the publications of the constitution and terms of reference of the so-called expert panel.

There are other key items missing, but, if we assume that we won't have the benefit of -

- Useful network information from infrastructure owners in time to lodge a bid;
- A network architecture indicating points of interconnect or any definitions of access services to be made available;
- Definitions of the minimum requirements of an 'open access' arrangement ;
- A regulatory framework describing the working principles governing supply of access to access seekers;

Then the terms of reference and constitution of the expert panel becomes the most important element protecting the interests of consumers.

With sincere apologies to Douglas Adams, the mindset driving this RFP clearly has parallels in the Vogon public service. There is little to no consultation with stakeholders, a fixed timetable ("resistance is useless!") and a blind obedience to a dogma epitomized by "What do you mean, why's it got to be built?" "It's an FTTN. You've got to build FTTN."

Whilst the Vogons launch what is called a 'Constructor fleet', its only role in the novel (Hitchhiker's Guide to the Galaxy) is to destroy an established and functional infrastructure.

I've commented before about the lack of consumer involvement in the public debate, if consumers aren't going to engage, then the importance of the involvement of experts who are able to take a balanced view and ensure the continuation of things like -

- Consumer choice, including the ability to easily switch providers, unbundle products and the freedom to decline;
- No disadvantage compared to existing services delivery and an installed base of customer equipment;
- Consumer price maintenance for equivalent services available today, should the infrastructure be altered;
- A competitive, innovation generating industry dependant on customer service for their livelihoods;

- can't be overstated.

At the moment, government rhetoric is full of noise that distils down to "Trust us, we're the government", unfortunately, most businesses are run on information, not platitudes.

Where information is absent, business gets twitchy.

Uncontrolled FTTN deployment is a risk to consumers, competition and the telecommunications industry. It is a risk to business, to government and to the country.

When risk is identified, risk abatement strategies need to be implemented. Clearly with the risks inserted by this carefree RFP approach, the obvious point to inject some protection from the Vogons is on the expert panel.

The panel needs -

- A strong consumer focus and a deep understanding of the benefits of choice, innovation and consumer needs;
- Technical expertise to guide decisions about architecture and how it all comes together in an access provider/access seeker context;
- Competition framework expertise, both broadly and specifically in telecommunications;
- Regulatory expertise including that relating to open access, interconnection and pricing;
- Investment and financial expertise, especially in a private sector environment;
- Expertise in Public policy development; and
- Government procurement obligations.
- Terms of reference that ensure the best result for consumers, not politicians.

We'd support any move to ensure the constitution of the expert panel and its terms of reference are drafted with customers and not Vogons at front-of-mind.

Regards,

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Regulatory Submission

On the requirements for an
Open Access
National Broadband Network

June 23, 2008

iiNet Ltd

iinet
connect better

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1. Introduction

The Government's pre-election policy stated that building a national broadband network is a major and historic step and one that is critical for Australia's future economic prosperity.

Critically, the network's construction is not only an historic step, but a major and historic opportunity to set in place an access and regulatory regime that will secure the future growth, innovation and competition in the information, communication and telecommunications sector.

The Government's pre-election policy, *"New Directions for Communications – Building a National Broadband Network",* correctly identifies the relatively parlous position of Australia's access to broadband.

It also correctly identifies the benefits of a more extensive and comprehensive broadband availability. In doing so, it highlights that the lack infrastructure investment has left many Australians with no access to fixed line broadband.

While this in part is true, the level of access to high-speed broadband and expansion of the Australian ICT industry has also been affected by the lack of genuine open access to the current infrastructure.

Notably, where genuine open access is available, either due to competition or enforced by determinations of the Australian Competition and Consumer Commission (ACCC), many Australians have access to broadband at higher speeds than proposed by the Government's National Broadband Network policy.

For example, iiNet can provide high speed ADSL2+ broadband to more than 90 percent of metropolitan Australians as a result of its investment in more than 300 exchanges using competitive access to other infrastructure.

In considering the implementation of the National Broadband Network, the Government and its advisers must recognise and consider this important fact: *"many Australians have been left with no access to fixed line broadband"* not just because of a lack of infrastructure investment, but also because of a lack of genuine open access to existing infrastructure and a regulatory regime that promotes, encourages and protects competition.

In this context, the Government's commitment to *"construct a genuinely open access national fibre to the node network and put in place regulatory reforms necessary to facilitate such an investment"* is welcomed.

Additionally, the Government's commitment that a pre-requisite for all proposals made under the policy must provide genuine open access to bottleneck fibre to the node infrastructure is also welcomed.

As noted in the pre-election policy, genuine open access must require equivalence of access charges and full scope for access seekers to differentiate their product offerings; by allowing the customisation of access speeds, quality of service and contention ratios.

Further, the recent High Court judgement in Telstra Corporation v The Commonwealth (6 March 2008) reinforces the critical importance of setting in place a statutory access regime in advance of awarding any consortium the rights to build

the National Broadband Network. That statutory access regime must be directed at expressly *"promoting … competition in the telecommunications industry generally and among other carriers"* and seeks to achieve this goal by *"giving each carrier the right … to obtain access to the services supplied by other carriers"*.

The future access and regulatory regime will be a key determinant of the ability of the Federal Government to successfully implement its election policy and deliver on its commitment to put *"Australian back into the fast lane of the information super-highway."*

The following submission is designed to provide the Government's Expert Panel with specific and critical factors for its consideration of responses to the Request for Proposals for a National Broadband Network.

It is based on the extensive experience gained from investing in, and delivering, high-speed broadband to hundreds of thousands of Australians with existing and new infrastructure and under the current access and regulatory regime.

2. Executive Summary

The opportunity to provide input to the Government's plan to move to a next generation telecommunications network is an opportunity to address some of the shortcomings inherent in the existing regulatory regime.

By utilising the $4.7 billion made available by government to establish equity in the NBN, government will have a vested interest in guiding the deployment of the NBN in such a way that government objectives are met.

Ensuring the funding is exchanged for equity in the network allows the government a stronger say in the pursuit of a social dividend over the long term rather than simply aiming for a short-term, financial dividend.

The general principles that need to be applied to the regulatory improvements are those aimed at a social dividend, that have been in place for some time and are expressed by government policy:

- Promoting competition;
- Promoting long term interests of the end user;
- Ensuring equitable service provision to all Australians.

Additionally, these improvements should address obvious deficiencies in the powers provided to the regulatory authorities charged with pursuing these principles. These include:

- Eliminating conflicts of interest between commercial interests and public policy objectives;
- The establishment of reasonable access terms;
- Improving the efficiency of arbitration processes.

Improving regulatory settings right will ensure consumer interests are promoted and the benefits of competition are realised in months rather than decades.

Leaving regulatory settings unchanged at this significant opportunity will lead to a reduction in competition and a return to higher prices, less choice and reduced product innovation.

Deployment of a new telecommunications infrastructure provides a unique opportunity to achieve a true open access regime, unsuccessfully pursued by Australian Governments since 1991.

Getting the access framework right, so that markets can operate efficiently is the key. Failing to address the known deficiencies while changing the architecture of the network platforms will destroy the competitive gains achieved to date.

In light of the importance of the regulatory framework in Australian telecommunications, it is essential that a central role for the Australian Competition and Consumer Commission (the ACCC) is ensured. A regulatory regime which requires the ACCC to exercise an oversight role in respect of capital expenditure for the NBN, the price and non-price terms and conditions on which access to the NBN is provided and the structural separation regime, is essential.

The summary objectives of the NBN regulatory environment must be -

- Structural Separation between any access provider and all access seekers;
- Streamlined and strengthened dispute resolution;
- Broad price setting powers incorporated into dispute resolution;
- Development of customer transfer processes including service provider to service provider and old to new networks;
- Preserving beneficial existing services and terms by the use of a 'No Disadvantage' test; including -
    - Maintenance of existing service types;
    - Price performance compared to pre-NBN services;
    - Bundling choices;
    - Security for aged and infirm.

Transitional arrangements are essential and should be aimed at meeting public policy objectives rather than shoring up anti-competitive structures -

- An 'outside-in' deployment of service starting with areas and customers currently without service. This includes non-metropolitan customers as well as those in 'broadband black-spots'
- Interconnection with current network technologies;
- Compensation for stranded assets;
- Migration not enforced until five years from the commencement of NBN services in a given location.

3. An 'outside-in' deployment

The network should be commissioned in under-served areas prior to those areas that already enjoy choice, high speed service and competitive prices.

Starting with those areas and customers that are currently without service, the network construction and commissioning should first benefit those with the most to gain. This includes non-metropolitan customers as well as those metropolitan customers in 'broadband black-spots'.

4. Structural Separation

The existing customer access network owner is fatally conflicted. It is required, by law, to provide network access to its retail competitors. It is expected to do this in the long term interests of all end users (not just its own customers).

It is also required by law to maximise the return to its shareholders.

It views these obligations as mutually exclusive and is forced to choose between the two.

It is unreasonable to expect a listed corporate entity to put the interests of its competitors, the broader industry or government policy ahead of its fiduciary obligations to its shareholders.

The letter of the current law is loose and provides many opportunities to avoid efficient access provision or public policy compliance. Conflicts of interest cannot be resolved by notions of good behaviour or the expectation of goodwill between commercial opponents.

Accounting separation and operational separation requirements do nothing to address the conflict of interest issue, in fact they may be seen to highlight the conflict by reporting the differences. The ineffectiveness of the current regime has been publicly commented upon by the ACCC.

The current access regime allows the network owner to dictate the pace that competitive services are deployed. Restrictive work practises are the norm and infrastructure deployment and interconnection is progressed, delayed or blocked without negotiation and at the whim of the dominant access provider.

There is no third party auditing, no justification for unilateral decisions and no appeal.

There is no incentive for any other approach by the incumbent.

Structural separation between the access provider and any and all access seekers will resolve this conflict of interest. A network owner or operator who is prohibited from retailing services to end users and licensed to sell only wholesale access will be incited by the commercial success of that wholesale provision, not by retail market share.

The NBN should be owned, operated and maintained as entirely separate legal and commercial entity with the its key business objective to deliver "a genuinely open access national fibre to the node network".

In doing so it must have at its core a genuine commitment to deliver and supply the

equivalent products and services to all access seekers at all times.

At a minimum this independent entity should also have the following characteristics:

- Have its own corporate structure responsible for building maintaining and repairing the NBN;
- Independently determine which products the NBN will support;
- Independently determine appropriate maintenance and enhancements to the NBN
- Have a independent management team with a CEO who reports solely to and directly to the Board of the NBN
- The CEO, management team and NBN employees may not be an employee or serve on the Board of any access seeker entity;
- The NBN entity must be at separately located premises as well as having secure and separated systems, including commercial information, customer records and financial systems;
- Remuneration and incentives for all NBN entity employees should only be based on the successful delivery of a genuinely open access NBN with equivalency in provision of products and services to all access seekers; and
- The NBN entity should have a separate brand, logo, website etc.
-

5. A 'No Disadvantage' test

A 'No Disadvantage' test should preserve existing services and terms including –

- A 'no change' choice for those not wishing to avail themselves of changed technology. Customers should not be immediately forced by the network design to change services or providers.
- Maintenance of existing service types to allow the use of appropriate technology and the continuation of services that do not depend upon high speed broadband for efficient operation.
- Price performance parity compared to pre NBN services to retain existing price points and service definitions.
- Bundling choices must be retained - allowing continued selection of individual services from different suppliers.

6. Unbundled services

Customers are currently able to choose from a menu of service providers for a selection of services. This range of choice is an outcome of competition and is a driver of innovation in the telecommunications market.

The NBN must be able to extend this flexibility so that an individual customer retains the ability to choose internet access from one provider, telephony from another and TV or other services from others suppliers without being obliged to

purchase from any.

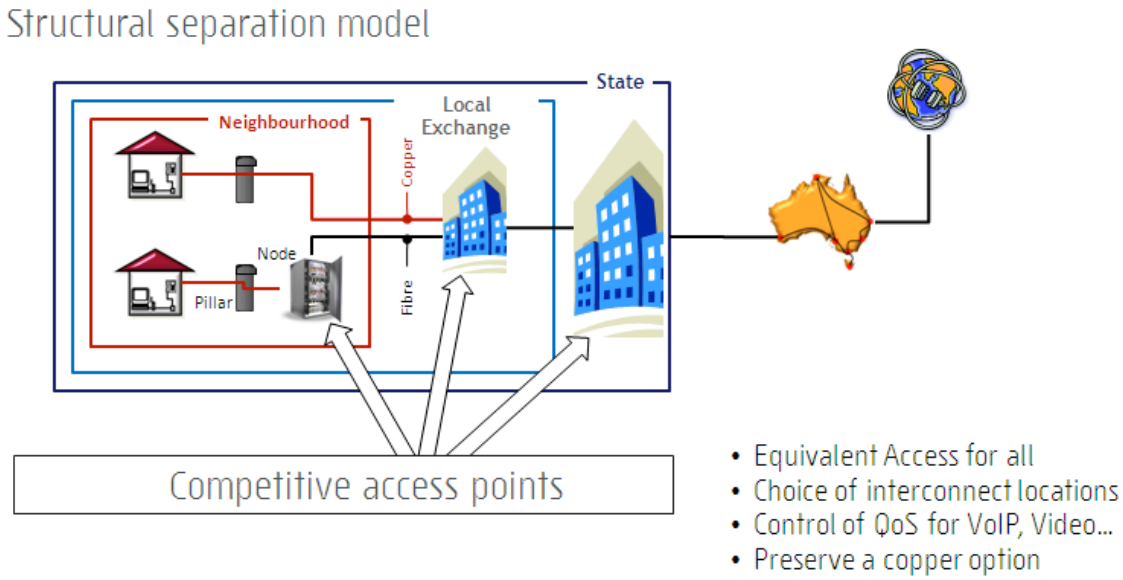
Customers who have no alternative provider today, are being forced to purchase telephony when all they seek is internet access. Where there is choice, customers are demanding unbundled services in significant numbers.

Functionally equivalent wholesale services (to that available pre-NBN) must be available to access seekers, in particular the maintenance of choice for unbundling of access services. Economies of scale and innovation are not mutually supportive and simple re-sale of services permits no product innovation, other than by the access provider who is remote from the end-user.

While it is understood that access seekers adopt varying business models, innovation is driven by those who have control over the network elements that are used to build products and services.

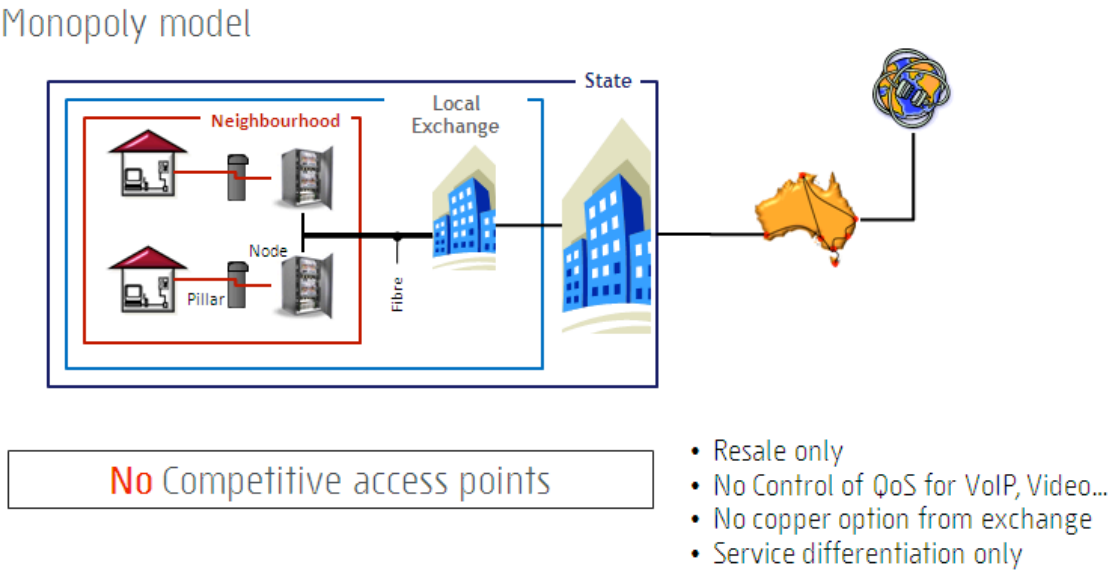
By designing the network so that access is possible at different levels, opportunities for investment and innovation are optimised. This means not only different versions of the same service, but opportunities for the development of types of service, as yet unseen.

Current arrangements allow unbundling at a number of points of access. New arrangements must not reduce these opportunities to add value for consumers or the development of new products and services overlooked or decided against by an access provider.



Access is a method of obtaining the right to use network components used in the construction and delivery of services. **Open** access means a transparent, equitable, auditable and sustainable framework of providing that network access on reasonable terms.

Making available a fully-configured retail product at a reduced price in return for bulk purchases is NOT access. It is simple resale and does not allow for innovation or significant differentiation. All control of product definition is in the hands of the wholesaler, as is evidenced by the beige sameness of broadband offerings of those re-sellers acquiring the limited broadband available services from Telstra in 2008.



There is no natural requirement to force the bundling of different classes of service in an NBN and neither is there any natural requirement to block access to certain classes of service. In particular, excluding competitive access providers from providing telephony or Pay TV would be a significant reduction in competitive opportunity since these are services which current infrastructure operators are able to deliver via their own equipment over ULL copper pairs today.

An NBN must support:

- Open Access to network components at varying access points;
- Delivery of multiple streams of service to each end user;
- Delivery of services by multiple service providers to each end user;
- Delivery of multicast IP and ATM to each end user;
- Delivery of a basic PSTN access bearer to each end user;
- Each of these services must be able to be connected to different service providers;
- End users must be able to choose between providers for each service.

The ultimate driver for these connections must be the end user who must have the right to freely choose a service provider as is the case today.

7. Exemptions

Consideration must be given to end users who are currently serviced by technology other than ADSL over copper pairs. Numerous end users are currently serviced by dial modems on PSTN or ISDN. Other users are in estates serviced by Fibre to the Home from a variety of carriers, often with no access to Telstra copper or competitive services. Many rural users receive internet service via a wireless access using proprietary protocols, WiMax or 3G[1].

[1] These examples are not meant to be exhaustive.

These customers must not find themselves casualties of a hasty deployment of an NBN.

Technical and commercial provisions to allow exemptions from forced migrations to the NBN must be incorporated in the successful bid.

8. Code of Practice

The NBN should have a detailed and public Code of Conduct which sets out not just the rules on provision of the products and services on an equivalent basis, but also the "good faith" intentions and objectives of its operation.

The Code of Practice must reinforce the entity's principle objective of providing a genuinely open access network with an equivalency of product and service delivery to all communications providers.

The Code should also cover areas such as confidentiality of the entity's commercial, management, consumer, product pipeline and financial information.

The Code must also include a reporting mechanism for breaches of the Code of Conduct.

All NBN employees must receive an induction on the Code of Conduct with 3 months of commencement and its mandatory compliance spelt out and adhered to at all times.

9. NBN Access Guarantee Board

A NBN Access Guarantee Board should be established to monitor report and advise on the delivery of the genuinely open access network with a specific focus on the provision of equivalency of access.

The NBN Guarantee Access Board should be appointed by, and be responsible to the Federal Minister. It must be independent of the NBN.

It should report annually to the Federal Minister on the operation of the NBN, including specifically advising on the delivery of an open access network, equivalency of access, review the nature, type and pattern of complaints.

The annual report to the Minister must be tabled in the Federal Parliament not more than 60 days after it is received by the Minister.

The NBN Access Guarantee Board membership should consist of experts in the field of telecommunications. To ensure its independence the Chair of the Board should not have been employed by an access seeker company with the previous 18 months.

Membership of the Board should reflect a broad cross section of the industry and community. It is recommended the membership may take the following form:

- Independent Chair
- 1 Representative of the Department of Broadband, Communications and the Digital Economy

- 1 Representative of the Australian Competition and Consumer Commission
- 1 Representative of the Australian Communications and Media Authority
- 3 representatives from access seeker entities
- 3 independent Government appointed members

10. Dispute resolution

Dispute resolution between access seekers and access providers is an area which is in dire need of improvement. In specifying an 'open access' regime for the NBN, there are areas where improvements are overdue.

The existing regulatory regime has a number of shortcomings which are easily identified by parties wishing to 'game' the regime. This has resulted in, for example nine years of dispute over the cost of the regulated ULL service, with no conclusion in sight for even the most basic commercial term – the price.

This continues to limit progress in the deployment of ULL services and presents a hurdle to investment for competitive entrants. Investors see the uncertainty of the regime, the inability of the regulator to conclude the process and the blocking power of the network owner as significant barriers to enter into the market.

These shortcomings also militate against Government competition policy.

All parties must have incentives to conclude negotiations quickly and reasonably priced, efficient access provision must be pursued as an attractive commercial proposition by the access provider (rather than a regulatory obligation). This is best achieved by removing the conflict of interest between access provider obligations and retail commercial imperatives. Structural separation of the access provider from a retail business unit is essential.

11. Price setting powers

Broad price setting powers should be incorporated into dispute resolution.

There are no current price setting arrangements in place. Instead, parties are expected to negotiate commercially. If negotiations break down, the ACCC has the power to arbitrate, those determinations are only binding on the parties to the dispute. Any other parties wishing to obtain the same result must negotiate/arbitrate separately and serially. Binding arbitrations between parties A and B have no flow-on to an identical dispute between parties A and C or B and C.

The current 'Negotiate – arbitrate' process is dysfunctional. It is based on the premise that two parties (Access Provider and Access Seeker) will negotiate in good faith to come to a commercial settlement for the provision of services.

Negotiation requires two parties. If one of the parties disagrees with the concept of providing access to its competitors, there is no incentive to participate in discussions on the terms of that access.

The 'arbitrate' step is designed to be a fall-back position in the event that parties cannot agree on an aspect being negotiated. In the current environment, no

negotiation takes place, so the arbitration step is employed as an unsatisfactory substitute for a bilateral talks. The Arbitration process, as it stands, is subject to ACT and ADJR oversight. Given the starting point is that one party does not want to be in negotiations to start with, the arbitrations are taken to their maximum time-frames and then appealed.

The current process is clearly not a suitable method for establishing prices in a dynamic market with hundreds of participants.

In the event that the negotiate / arbitrate model is to continue, the minimum change required would be for a single arbitration to automatically be applied to all similar arbitrations brought during the life of the declaration. An arbitration determination would, therefore, have the power of price setting for the industry at large.

This concept should be broadened to cover any determination relating to a dispute on access provision as price is not the only basis for dispute or in need of arbitration.

12. Transparent Terms & Conditions

Transparency in the provision of (what will effectively be) monopoly access services is essential to reduce disputes and provide for accountability. It assists in driving down costs and encourages access seekers to develop innovative products on the platform. It is implicit in the concept of 'Open Access'.

There are two types of barrier in the current environment which may be transferred into an NBN world if they remain unchecked. Financial barriers include Access Seekers being forced to wear disproportionate commercial risk in the form of unnecessary security deposits, onerous payment and trading terms and a loss of commercial security over their own customers.

Additionally, the instability of service brought about by the Access Provider retaining the right and capability to withdraw wholesale service from access seekers with minimal notice, leaving access seekers without recourse or the ability to provide alternative services for their end users.

Access terms and conditions must be submitted to the regulator in the form of access undertakings, they must be transparent, comprehensive, complete and available for publication.

13. Customer transfer processes

Customer transfer processes are essential and should include service provider to service provider as well as transfers from old to new networks.

Customers must be able to choose providers or service types and be able to switch without penalty.

Under the current network arrangements, there is no consistency of transfer arrangements between infrastructure or service types. Number portability arrangements vary as does platform portability.

Some existing transfer arrangements are non-existent and customer transfers between providers or even between different access arrangements with the same provider can be accompanied by enforced outages which create barriers to switching. Some customer transfer processes are voluntary and some are not.

A fully automated and compulsory customer transfer regime must be put in place in order to provide customer choice and drive competition. This process should be implemented as an industry code and negotiated via the ACIF process. This transfer regime must incorporate current network to NBN transfers as well as provider to provider transfers.

Monitoring and compliance with the transfer codes should be the responsibility of the ACCC.

14. Stranded assets

Compensation for stranded assets must be provided for all existing asset owners and appropriate customer migration processes must be in place to move customers off the infrastructure to a service provider of choice.

The impact of stranded assets is not restricted to access seekers, but also extends to customers who have purchased equipment compatible with the services offered by their provider and which will no longer remain functional under an NBN.

A managed migration away from stranded assets must be available. Stranding must not be at the whim of the network operator or owner. Investors under the current regime are still expected to commit to infrastructure even while the NBN process is underway.[2] A reasonable period in which to generate a return on investments is important to retain investment in the sector.

Under the current regulatory regime, in line with the 'Ladder of Investment' concept and synchronised with government policy, many investors have developed infrastructure at great cost of both time and resources.

Transitions from current network to NBN must be possible without significant outages or compulsion;

A no-disadvantage test for access seekers must be satisfied prior to services being migrated to NBN (E.g. telephone numbering remains the same; service performance and price must be equal to or better than the service being replaced);

Interconnection between current network and NBN must be developed to allow a continuation of any-to-any connectivity.

In addition the principles above, end users are particularly vulnerable to sweeping technology changes which have the potential to render their own current hardware investment worthless. Hundreds of millions of dollars have been invested by end users on ADSL Customer Premises Equipment (CPE) in the last two years alone. Business users must be allowed to continue to depreciate this equipment appropriately.

A guiding principle for an NBN must be:

End users must be able to use existing ADSL CPE for at least five years from the commencement of an NBN; or

The NBN builder must replace and configure the ADSL CPE of an end user

[2] ACCC Draft decision on Telstra's exemption application. http://accc.gov.au/content/item.phtml?itemId=825675&nodeId=bbb2e02d887843e0b9ccfc546f3296bf&fn=Draft%20decision%20on%20Telstra's%20exemption%20applications.pdf

acquired within five years of the commencement of an NBN; such that the end user can transition from current networks to NBN without outages.

15. Investment certainty

In the current Australian regime (and in other jurisdictions), the concept of a 'ladder of investment' encourages new entrants to previously monopoly markets. It suggests that a new entrant can enter a market with limited investment, gain market share and then expand that market share by targeted investment in infrastructure (which offers efficiencies and improved profitability), proceeding, over time, to a point where the new entrant has comparable infrastructure to the incumbent.

In the telecommunications market, this has been illustrated by new entrants investing initially in sales and marketing (call centres, billing systems, CRM, etc) and re-selling fully developed retail products and services purchased form others.

A next step has included the installation of voice switches, transmission systems and interconnection facilities. Later, data switches, DSLAMs, and access networks have been deployed (see below).

The introduction of a monopoly NBN platform brings to an end most of this investment ladder and leaves only those on the top rung with a path for investment.

Opportunities for competitive investment in the NBN must not be excluded. Legitimate infrastructure owners must be either compensated for stranded assets or allowed to retire assets in line with reasonable investment returns or product life-cycles.

Providing certainty for competitive investment without an overhanging risk of stranding as a result of inappropriate use of market power will encourage further investment in this sector. This is best achieved by removing the conflict of interest between access providers and retail commercial imperatives. Structural separation of the access provider is essential.

16. Conclusions

- Structural Separation between access provider and access seekers must be the starting point for the provision of an NBN that will outlast any government putting it in place
- The NBN must be owned, maintained and operated by a separate legal and commercial entity
- A detailed and compulsory Code of Conduct entrenching rules and intentions of an open access NBN must be established
- A NBN Access Guarantee Board should be established to monitor, report and advise on the operation of the open access NBN with a specific focus on the provision of equivalence of access
- Dispute resolution should be streamlined and strengthened
- Price setting powers should be incorporated into dispute resolution.
- Customer transfer processes are essential and should include service provider to service provider as well as current network to NBN
- No Disadvantage test should preserve existing services and terms including -
- Security for aged and infirm
- Maintenance of service types
- Price performance compared to pre NBN services
- Bundling choices
- Transitional arrangements are essential -
- Interconnection with current network must be available
- Compensation for stranded assets must be incorporated for all existing asset owners
- Migration to an NBN Should not be enforced prior to five years from the commencement of NBN services in a given location.

17. Contact Details

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