

Inquiry into the National Broadband Network: Central Coast, NSW, Business & Community perspective

Authored and compiled by David Abrahams on behalf of the Community and Business sectors on the Central Coast of NSW.

1 Executive Summary

The NSW Central Coast is a regional area in dire need of better broadband to grow economically, socially and to improve it's level of government and community services.

The region has 40,000 commuters, a fast growing regional population projected to increase by 100,000 in the coming decades. The region already has considerable stresses on it's transport, economic and service infrastructure.

The region recognises the importance of high quality broadband to it's future. Indeed at the last federal election pro-NBN candidates received sizable positive swings, bucking the state and national trends. A local business and community campaign was run online, on radio and in industry specific media bringing real awareness of the importance of reliable, uniform broadband to the region's voters.

A current business and community campaign is in motion aiming to promote an advanced regional roll out of the NBN is well underway and has not as yet received any documented opposing views.

The availability of what is dubbed in this submission '**Production Quality Broadband**', or broadband that has a capacity to upload information at rates greater than a minimum of 4Mb/sec consistently, is key to increased productivity, improved services and an ability to grow economically.

The current infrastructure is woefully inadequate for this productive task. The NBN is the only serious telecommunications infrastructure investment on the horizon for this region. No other serious alternatives have been presented to the community. To this end , it is obvious that the business and community sectors have and will support the vital regional investment that the NBN represents.

This submission addresses the following points of reference in The Inquiry:

- a) the delivery of government services and programs;
- b) achieving health outcomes;
- c) Improving the educational resources and training available to teachers and students;
- f) impacting business efficiencies and revenues, particularly for small and medium businesses and Australia's export market;
- l) the optimal capacity and technical requirements of a network to deliver these outcomes.

2 Delivery of government services and programs

This section draws upon the publications, reports and information from:
NSW Health; Northern Sydney & Central Coast Area Health
ABS Population and Housing census data 1996,2001, 2006
NSW Department of Planning, Draft Regional Strategy Central Coast 2010
Central Coast Research Foundation, Central Coast at a glance, 2010
YouthConnections.com.au Work Placement

2.1 Situation Analysis

The delivery of government services in health and education are already stretched for resources. The NSW Central Coast with its burgeoning younger and older population demographic experiences particular stress in education and health sectors.

The region has lower than state average educational attainments and higher incidences of disease and mortality¹. This trend is increasing each year placing more pressure on government services.

The age groups that are growing the most in the region are 15-24 year olds at 2.3% pa and the 55-64 year olds by 4.1% pa.²

The region's difficult topography and poor public transport system³ severely limit effective distribution of services by traditional physical means.

2.2 Expected outcomes

It is expected that a uniform stable high speed broadband⁴ system will facilitate investments in service delivery that will considerably reduce the strain on service budgets. These measures will delivering increased productivity levels in government sectors that greatly need efficiency gains to maintain and improve standards.

When commissioned the National Broadband Network will present an opportunity to effectively deliver government provided or subsidised services to this region's growing population.

Already it is noted that early stage government online delivery of boat and vehicle tests, registration and licensing has vastly increased productivity in these service areas.

Large productivity gains of moving basic administration online for facilitating the delivery of mandatory work experience places for secondary students has been achieved in the region's high schools using a system called WorkPlaceWeb.

Such education services to younger residents and care services to older residents are the most obvious beneficiaries of the NBN. Yet government services as specific as effectively patrolling the 15km of beaches in the region has a significant cost and service limitation attached at present.

Hiring in more and more personnel to service keys sectors will become economically prohibitive at some point. More productive methods of service delivery must be found. The NBN will undoubtedly contribute to productivity gains in delivery of government services.

1 NSW Health, Report to chief officer 2008, Northern Sydney & Central Coast Area Health

2 ABS Census of Population and Housing, 1996, 2001, 2006

3 NSW Department of Planning Draft Regional Strategy – Transport – Car dependency

4 Central Coast Research Foundation 2010, Internet use 30% people can't get any broadband.
(addendum: Private research – <70% can not get 2Mb upload speeds required for higher quality video uploads)

3 Achieving health outcomes

This section draws on publications, reports and anecdotal evidence drawn from: NSW Health, Report to chief officer 2008, Northern Sydney & Central Coast Area Health, Central Coast Division of General Practice, Annual report 2009-2010
HeadSpace.or.au – Online Mental Health Support, Media Release January 13, 2010.

3.1 Situation Analysis

Central Coast demographics have an unusually high portion of people in the 0-24 and 55 + age groups. Both age groups have high health care needs and rely on a broad network of health care services to access care.

Yet the region has consistently high levels of disease and mortality compared to NSW averages in key indicators of health such as breast cancer, melanoma and prostate cancer⁵. Both of these areas of the population are growing as more and more people retire to the Central Coast or young families move for housing affordability reasons.

There is a very real problem of accessing General Practitioners in the region, compounded by a decrease in the number of GPs in the region, due to retirement. Workforce recruitment issues remain one of regions most important issues. In fact 30% of the region's Gps are due to retire in the next 5 years⁶. A fact that will put increasing pressure on service delivery. The question now will be how can we do more with less people.

3.2 Expected outcomes of NBN

Improvements in health delivery are possibly the most cited cases for the use of the NBN in the ongoing debate around the initiative. These benefits are obvious to even the casual observer of the delivery of health services. The sharing of health information between health care professionals is an advantage that most people have availed themselves of. This is due to the adoption of computerised systems and just as importantly the roll out of broadband networks.

Most General practices on the Central Coast have over the last decade been well trained and have been helped in investing in IT systems and networks. General Practices have an increasing need to upload data to other healthcare professionals. The current limitations of the ADSL and associated low upload speed networks is a limiting factor to the productive capacity of these practices.

The NBN fibre based connections with there vastly increased upload speeds and network stability is expected to dramatically increase the productivity of General Practices, particularly in complex cases requiring multiple medical imaging sharing among professionals both inside and increasingly outside the region.

Mental health services are another area that is likely to benefit from the universal patient access to fast stable production quality broadband. Video based counseling, training and service delivery is already becoming widely recognised as the way to greatly improve access to specialist services⁷.

5 NSW Health, Report to chief officer 2008, Northern Sydney & Central Coast Area Health

6 Central Coast Division of General Practice, Annual report 2009-2010, Workforce.

7 HeadSpace.org.au Central Coast – Online Mental Health Support, Media Release Jan 13, 2010.

The Central Coast with it's difficult public transport situation and lower levels of resident mental health specialists stands to gain more than many areas from remotely delivered service technologies via the NBN.

4 Improving educational resources and training available to teachers and students

This section draws upon the publications, reports and information from:
NSW Department of Education, Hunter/Central Coast region
www.thecentralcoast.org/facilities/schools
Central Coast Investment Prospectus 2010
ABS Census of Population and Housing 2006
Central Coast Research Foundation, CC At a Glance 2010:

4.1 Situation Analysis

The Central Coast has 107 registered schools including public, catholic, other religious and independent schools. There are two multi campus community colleges, three major campuses of TAFE and one campus of the University of Newcastle on the Central Coast.

There are approximately 80 preschools in the region as well as about 50 privately run music, language, drama, sport, technical and tutoring colleges.

Education is a major industry in the region and best estimate calculations indicate that over 60% of the region's 300,000 people are involved in education in one form or another in the course of a year.

Educational attainments are generally lower than the state average⁸. An indicative example shows that only 9.4% of the population have a bachelor degree or higher compared to a state average of 16.5%. Although there is a trend that University and TAFE attendances have been gradually increasing over the last few years⁹.

Most schools have been connected to fast broadband connections with fast download rates that can cater for the increasing use of online resources in education. Schools have invested heavily in IT resources and the ongoing roll out of laptops to students from year 9 and above is delivering a major strain on networks. This trend is likely to increase in the coming years as more and more educational resources are moved into the online space.

Teachers too are becoming increasingly heavy users of IT and networks and many now in a position to produced original online content.

The networks to support this massive growth in usage are beginning to show signs of strain. Teachers at a local high school reported long and slow download speeds in peak periods of the day.

Educational professionals are also being expected increasingly to work from home after hours and on holidays. Many are suffering the poor broadband speeds and inconsistencies in the region. This is a major limiting factor to educational delivery and quality.

Much of the network capacity is of an asynchronous nature and therefore reduces the ability to upload material at the same rate as downloading. This will be a serious constraint to education innovation and production in the near future. Production Quality Broadband with consistent upload speeds at the minimum at 4Mbs/sec are necessary to meet current demand.

⁸ ABS Census of population and housing 2006

⁹ Central Coast Research Foundation, CC At a Glance 2010

4.2 Expected outcomes of NBN

The NBN is in the first instance expected to be able to provide the productive network capacity that will be required in the educational sector in the next few years as network demand will grow massively as new learning technologies and a new generation of teachers reach the schools.

Many schools have already received the benefit of reasonable broadband on the premises. It is however the teacher's private access to reliable Production Quality Broadband that will be the of the greatest benefit to increasing educational productivity and innovation in the region.

There are specialist subjects where Production Quality Broadband will become imperative. The areas of music, media and entertainment will benefit vastly from the fibre optic based NBN network. These industries are very popular on the Central Coast and many notable entertainment industry successes are based in the region. Among them are high profile figures such as Gina Jeffereys, Kasey Chambers, Rod McCormack, Brian Lizotte, Don McAlpine, Larry Page et.al who all contribute positively to their communities through support of educational initiatives. A production quality broadband network will stimulate innovation in this field and allow it to market to a greater audience world wide.

The region's youth education and employment group YouthConnections.com.au is currently building an Internet Television and Movie production facility at Kariong with the intention of both training and commercially producing music, entertainment and educational productions. The YC Media Centre will benefit from Production Quality Broadband services that will allow them to supply a large market with locally produced productions.

YouthConnections.com.au already produces a successful radio show that is broadcast via the local radio station CoastFM 96.3. An enterprise that has already trained over 400 students in audio and radio production.

The NBN will create a market for YC Media's high quality video and movie productions that is simply not possible under the current telecommunications infrastructure.

5 Impacting business efficiencies, revenues ...

This section draws on publications and reports from:

Central Coast Business Prospectus 2010-11

Central Coast Business Review February 2011

NSW Department of lands : Small industrial sites 2009

Central Coast Research Foundation, Economic Indicators Sept 2010

5.1 Situation Analysis

The Central Coast is characterized by having no corner stone industries or indeed any industries of any great size, unlike the Hunter region or the vast economy of Sydney to the south. Instead the area has a broad range of small to medium sized industries spread around the region in pockets of small industrial parks, villages village centres, retail shopping centres and the two decaying CBDs of Gosford and Wyong. The latter are collective embarrassments to the region's residents and are effectively shunned by investors and visitors.

The region's telecommunications infrastructure is a hap hazard affair despite considerable demand for services over the last decade telephone exchanges and mobile services remain only tolerable in the best instance. Upgrades have been done and most exchanges now have Telstra supplied only ADSL2 capacity, though this is delivered over poor copper wires that provide highly variable speeds and reliability.

The region's businesses acutely realise the disadvantage that the area has when it comes to telecommunications infrastructure and the ability to grow and invest. This has been illustrated in good attendance to forums and campaign cries to improve the situation over the years.

Some areas have been provided with fibre optic junctions, though only a few companies can warrant the thousands of dollars per periodic charges that are being offered at the moment. Indeed the local technology precinct has the infrastructure, though not one of the 25 resident businesses can afford to connect to it.

5.2 Expected outcomes of NBN

The NBN investment will create a high quality regional business grade network for the first time in the region's history. In turn it will allow local small companies to compete with metropolitan and offshore competitors.

Access to fast, reliable and affordable Production Quality Broadband will enable many of the region's smaller businesses to innovate , grow and employ new people. A combination that the area needs in spades.

6 Optimal capacity and technical requirements...

This section draws on publications and reports from:
Central Coast Business Prospectus 2010-11
Primary data sourced from www.whirlpool.net.au

6.1 Situation analysis

The NSW Central Coast is a region that is both blessed and cursed for its topography and subsequent settlement patterns. A region of valleys, villages and towns nestled between steep hills covered in tall trees. It makes for a beautiful place to live. It also makes for a difficult place to deliver telecommunications infrastructure. Copper telephone cables are stretched over long distances from smaller and larger exchanges. Mobile phone towers and booster stations pepper the region, trying to project into the hundreds of populated small valleys. These technical requirements make a uniform coverage a challenging business for telecommunications providers.

Fortunately the growing population and a projected commercial growth has helped justify basic investments to date. Most older telephone exchanges have been upgraded to ADSL2 capacity by Telstra, only two exchanges have non Telstra ADSL2 infrastructure, severely restricting competition in this sector. The fact is that the distance from exchanges, quality of the copper lines and increased use by existing customers has made many ADSL2 connections slow and unreliable.

The existing infrastructure is showing signs of considerable stress and a real lack of growth capacity. Next generation DSL will further shrink the radius of customers that can access these services.

In the vacuum of poor DSL services several fixed wireless providers offer services in the region, though these are often expensive to install and/or have download or speed restrictions.

Mobile 3G data services have been able to deliver some mobile broadband options to many people that don't have the opportunity DSL services. Though these services advertise very

high download speeds, the reality is usually much slower¹⁰, due to in the main the to difficult topography, network capacity and/or prevailing weather conditions.

In all cases the upload capacity of the networks is poor. In others words the **Production Quality Broadband**¹¹ of the network is limited and therefore will not service new generation services.

6.2 Expected outcomes of NBN

The greatest contributions the primarily fibre optic based NBN will give the NSW Central Coast region will be fast upload speeds, stability and uniformity of what I've dubbed '**Production Quality Broadband**'.

This Production Quality Broadband will enable a blossoming in productivity in the region. Not only in high technological businesses but broadly across community and business sector.

The current NBN delivered upload speeds are considerably higher¹² than those of existing ADSL or wireless options and use considerably less energy to do so.

The NBN technology will particularly suit the NSW Central Coast region with it's aforementioned topography and strained legacy telecommunications infrastructure.

Fibre optic technology is not limited by distance from the exchange as copper or wireless communications are. Therefore there will be a reduced need for expensive exchanges and less need for towers and repeater stations on buildings in the area.

The NBN will give this region the capacity to effectively export it's knowledge and share the wealth of collaboration with others. In turn this will give hope to the tens of thousands of people who 'export' themselves everyday to more productive locations.

In closing I believe that the NBN will afford many young people in this region with opportunities to be skilled and participate in the regional/national economy in a way that has not been possible previously.

This submission is written by David Abrahams as a private individual. The analysis and views formed are my own. My conclusions were made in a capacity as unofficial regional campaign coordinator advocating the NBN investment. I have lead this campaign by default due to my past role as author of the regional Telecommunications Strategy and member of IT industry groups at the AIIA.

This analysis involved a long series of talks, forums and personal discussions with community and business leaders from a broad spectrum of industries and organisations.

My current positions all involve IT and Telecommunications development.

Corporate Development Manager vTeam.com.au

Special Consultant – Organise Internet

Directorships

Chair – YouthConnections.com.au

YC Industry Link Pty Ltd,

YG Enterprises Pty Ltd,

BISEE Pty Ltd,

10 <http://bc.whirlpool.net.au/bc/isp-15-8/iinet-mobile-broadband.htm> - 0.384 Mb/sec upload.

11 My definition of 'Production Quality Broadband' is > 4Mbits/sec upload capacity.

12 Prime data: <http://bc.whirlpool.net.au/bc/isp-9-16/internode-nbn-stage-1.htm>

Specialist Commentator on Digital Issues ABC Local Radio. Primarily 92.5 Central Coast, 1233 Newcastle, New England North West.