

Today I am here to talk to you about the Gillard Government's world class National Broadband Network.

The NBN stands as an example of this government's determination to build the Australian economy's long-term future.

I want to outline the significant progress we have made this year, and what we can look forward to next year.

I will talk about why we need the NBN.

The NBN is the largest infrastructure project this country has ever seen.

We are embarking on this project because broadband is a serious issue, and the Labor Party treats it as such.

It stands in stark contrast to the narrow and negative approach of the Coalition this year.

2011 has been a year of great progress for the NBN.

Eight first release sites across Australia now have customers connected.

Over 18,000 premises have been passed by fibre, and over 3000 customers are now connected to the NBN.

Construction contracts have been agreed for the rollout in every state and territory.

In June, the Government and NBN Co reached an historic agreement with Telstra.

The deal means a more efficient and cost-effective rollout, and less disruption for local communities.

The deal will also deliver significant reforms to the sector, including the structural separation of Telstra.

In October, 99.45 per cent of Telstra shareholders voted in favour of the NBN deal.

We have seen real progress in the bush.

NBN Co has signed a deal worth \$1.1 billion with Ericsson for the rollout of the fixed-wireless network in rural Australia.

The Interim Satellite Service is up and running, with over 1000 customers in the most underserved parts of Australia.

They are now receiving a better standard of broadband than many in metropolitan areas.

Meanwhile, the Long Term Satellite Service will see us build and launch two satellites by 2015.

These satellites will use next-generation technology (Ka band) to deliver the best possible broadband services to isolated parts of Australia.

The fifth and final link of the Government's Regional Backbone Blackspots Program will be switched on before Christmas.

And NBN Co has announced a 12 month rollout program covering 485,000 premises.

Early next year, the three year rollout plan will be released.

What you will see is fibre to be built in safe Labor seats, safe Liberal seats, marginal seats, and any other kind of seat you can imagine.

It has been a big year, and the NBN is today very much a reality.

The NBN means jobs and opportunities for our economy.

Around \$3.5 billion of NBN Co's procurement involves local content.

The physical rollout will create up to 18,000 direct jobs around the country.

It is no surprise that only Labor takes communications policy seriously.

The ALP is proud of its commitment to communications in Australia.

It was the Whitlam Labor Government that implemented the separation of Post and Telecom in 1975.

Labor established the concept of these authorities trading as business entities.

Labor corporatized Telecom and introduced retail service competition.

Yet mistakes in this sector have stretched over 20 years and across both parties.

These were compounded by the Howard Government selling Telstra without securing any effective separation.

Telstra earned 65 per cent of the industry's revenue ... and 90 per cent of its profits.

Structurally, the industry was broken.

In this century, it has been Labor that has developed a contemporary communications policy.

Only the NBN addresses the poor state of broadband services, the need for a ubiquitous, long-term solution, and the requirement for structural reform.

The Coalition offers none of these.

Instead, they have a critique of the NBN framed in the same way as its response to climate change.

The strategy has three simple steps:

First, they say there isn't a problem.

Second, they say the Government's proposal won't work or is too expensive.

Finally, they propose a plan that fails to deliver for our future needs.

The first claim they make is that there is no problem.

Malcolm Turnbull has consistently asked what is wrong with what people get today?

As Opposition Leader, he said:

"I've got a Next-G wireless card in my laptop and when I was in Mackay yesterday I was getting 3.5 Mbps ..."

... that allows me to do everything I need to do.”¹

Last year, he questioned the need for speeds above 12 Mbps:

“You tell me, what are the great productivity enhancements that cannot be accessed by 12 Mbps?”²

Well, let's look at the facts.

There continues to be dramatic growth in the volume of data moving around the internet, and in demand for broadband speeds.

A number of charts illustrate this.

This chart shows how evolving technology has increased download speeds exponentially since 1985.

¹ Malcolm Turnbull, Radio 4RO, Rockhampton, 15 April 2009

² Malcolm Turnbull, ZD Net, 3 November 2010

Download speed requirements have increased at 25 to 35 per cent per year for more than two decades.

This chart shows these download speed trends over time.

The trend of exponential growth in download speeds has been consistent.

Just as dial-up rapidly became insufficient for our needs, so too will copper based technologies become insufficient very soon.

I've talked about download speeds, but broadband communication is two way. It requires capacity to send information, or upload, as well as to receive information.

Our broadband infrastructure today has severely limited upload capacity.

High upload speeds are vital for applications that use high-definition video conferencing.

These are applications that will transform many aspects of our lives.

They will impact the way we educate our children and consult with our doctors.

High upload speeds are also vital for small business.

Small businesses increasingly need to send large files, and do so from many locations, including the home.

A key feature of the NBN is that fibre gives you the capacity to use these applications.

And the capacity to use them with more than one device, and more than one user at the same time.

The second fact is that fixed-line networks continue to play a critical role in our broadband landscape.

This chart from Cisco shows global IP traffic is forecast to quadruple between 2010 and 2015.³

The volume of data over the internet is growing at a compound rate of 32 per cent annually.

This will place increasing strains on our broadband infrastructure.

The orange at the top of the bars represents mobile connections.

It is true that the number of wireless broadband subscriptions is skyrocketing, as more Australians take up smartphones and tablets.

Many of you here own two or three or more of these devices.

So the volume of mobile connections will grow significantly.

³ See http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/VNI_Hyperconnectivity_WP.html

Yet fixed-line connections — the dark and light blue bars — will continue to do the lion's share of data transfer.

What's important to note is that the light blue bars represent Wi-Fi.

Wi-Fi are short distance wireless connections commonly found in our homes, offices, cafes and airports that are linked to a fixed-line.

We use WiFi networks to connect our smartphones, tablets, and laptops to the internet.

But these are not mobile connections. They are, in fact, using a fixed-line connection.

Do not misunderstand me. Mobile networks have an important role to play in our broadband future.

They are complementary to fixed-line broadband networks. But they are not going to replace fixed-line networks.

In summary,

- we will continue to need greater and greater capacity in our broadband infrastructure; and
- we remain heavily dependent on fixed-line networks.

But according to Mr Turnbull, there is no problem.

He simply denies this growth will occur.

The second part of the Coalition's strategy is to claim the Government's policy is too expensive or won't work.

Mr Turnbull continues to misrepresent the project's true cost.

First he confused operating expenses (OPEX) with capital expenses (CAPEX) by including lease payments to Telstra in the capital cost.

More recently, he has tried to add CAPEX for replacement and upgrades after the network is built to the construction cost.

Last week he claimed to have found another \$6 billion in operating expenses.

He claims to know more about NBN Co's expenses than the company itself.

On top of these misrepresentations, Mr Turnbull uses misleading comparisons to other countries.

For example, in this room, he suggested New Zealand was delivering Fibre to the Home more cheaply than Australia.

He did so by misrepresenting the investment sums.

He referred to the total project CAPEX for Australia for the three technologies covering 100% of the country.

In doing so, he used his fictitious \$50 billion CAPEX figure.

Yet he compared it with the New Zealand government contribution for fibre covering only 75% of the country.

Mr Turnbull is also misleading about 'affordability' of NBN services.

Mr Turnbull has said the 'NBN will increase retail prices.'⁴

And he promotes wild claims about NBN prices.

Henry Ergas, an economics consultant to Mr Turnbull, claimed a couple of years ago the NBN would cost users more than \$200 a month.⁵

Yet the fact is retail pricing over the NBN today is broadly in line with, and in many cases cheaper than, current ADSL prices.

⁴ Malcolm Turnbull, Press Club address, 3 August 2011

⁵ CommsDay, 21 April, 2009

Today, for example, NBN packages start from \$34.50 per month.

For \$37.50 per month, you can purchase a 25/5 service which is superior to anything available over copper today.

Independent consumer website Whistle Out recently found entry level NBN prices were between 23 and 43 per cent lower than comparable ADSL 2+ plans.

Furthermore, NBN Co has committed to the ACCC that wholesale prices will decrease in real terms over time.

Further, the price for entry level services will be frozen for five years.

The third part of the Coalition's strategy is to suggest alternative plans that fail to deliver for our future needs.

It is actually difficult to work out exactly what Mr Turnbull is proposing.

He variously suggests using a mix of technologies including HFC, wireless, and fibre-to-the-node.

Excuse me while I get technical and explain the limitations of each.

The centrepiece of Mr Turnbull's plan seems to be fibre-to-the-node.

But Mr Turnbull is misleading or ill-informed when he talks about FTTN.

Mr Turnbull has suggested download speeds of 60 or 80 Mbps are feasible over copper.

However, the speeds you can achieve over copper depend on how the copper network was built.

The diameter of the copper and the length of the copper lines severely restricts the speeds achievable in Australia.

That's the first limitation of broadband over copper.

To achieve the speeds Mr Turnbull speaks of over FTTN requires bonded copper pairs – which means using at least two copper lines per connection.

Australia's network has not been designed or built with two copper lines available to every premise.

We simply do not have the copper availability and quality to deliver the speeds and performance Mr Turnbull describes.

I have mentioned the importance of upload speeds. FTTN is severely limited in this respect.

Building FTTN which delivers such low upload speeds would be like building the Sydney Harbour Bridge with only one lane, and in only one direction.

And then making people row a boat back across the harbour.

Mr Turnbull says an FTTN build should be done “in a manner which facilitates a future upgrade to FTTH.”

In reality, any FTTN build is a wasted investment.

It involves the installation of tens of thousands of these large cabinets.

A cost-effective rollout of FTTN does not provide an efficient upgrade path to Fibre To The Home.

It is not a simple matter of building fibre part of the way to the home, and then building the rest later.

All we need for FTTH are these, much smaller and simpler, splitter boxes, shown here on the left.

This cabinet, or node, contains expensive active electronics that cannot be used with a fibre to the home build.

This means billions invested in the technology in the nodes will be wasted when a government concludes Fibre To The Home is needed.

For a case of a government making this decision, look no further than New Zealand.

Mr Turnbull has put New Zealand's broadband policy on a pedestal. He said:

*'we have been already completely and utterly outdone by our Kiwi cousins on broadband.'*⁶

Across the Tasman, New Zealand has been building a fibre to the node network since 2008.

⁶ Malcolm Turnbull, Press Club address, 3 August 2011

However, this year, they abandoned fibre to the node in favour of fibre to the home, the same technology we are using for the NBN.

So, before the fibre to the node network was even completed, New Zealand decided to replace it with fibre to the home.

To quote Stephen Joyce, who until yesterday was the New Zealand Minister for Communications:

“The future of broadband is in fibre, and taking it right to the home will bring significant gains for productivity, innovation and global reach.”

He went on to say:

“Ultra Fast Broadband is a key part of the government’s economic growth plan.”

Broadband speeds of 100 Mbps and more will revolutionise the way many businesses operate.”⁷

Unlike our Opposition, New Zealand’s Conservative government understands the importance of super-fast broadband infrastructure.

So yes, Mr Turnbull, New Zealand does have it right, FTTN is inadequate.

HFC is another technology he has suggested using.

The existing HFC network is a major part of his plan to serve metropolitan Australia.

Mr Turnbull claims 30 per cent of all homes can be served by HFC.

HFC refers to the duplicated networks of Optus and Telstra pay TV cable.

⁷ Stephen Joyce, NZ Minister for Communications, Press Release, 24 May 2011

It can also deliver broadband.

I want to play a quick clip of what broadband would look like under his plan.

That was an advertisement made by Pacific Bell—now AT&T—in the United States ten years ago.

The point is: HFC is a shared medium.

The more people using it in your street, the slower it gets.

When people start ‘hogging’ the available capacity, there’s not enough to go around.

I’ve shown you the enormous growth in demand for capacity by end-users. Using HFC is a dead-end solution.

Let me make two further points about the limitations of HFC.

Firstly, just like FTTN, it cannot deliver high upload speeds.

Secondly, the HFC networks are closed access – retail services are only offered by the two companies that own them, Telstra and Optus.

What about competition? Does the Coalition plan to force the cable networks to become open-access?

After FTTN and HFC, we come to wireless.

Wireless has similar, yet more profound limitations, than HFC.

Under the NBN, Labor will deliver fibre to 93 per cent of Australia.

The ‘last 7 per cent’ outside the fibre footprint will receive a mix of wireless and satellite technology.

Because wireless is a shared technology, it works very well in low-density areas, where less people share the capacity.

The NBN's fixed-wireless network is designed to serve a specific, restricted number of premises in a given area.

This will allow a more consistent and reliable service.

But the fact of wireless remains: the more people using it, the slower it gets.

When wireless is used in areas with higher population density, this becomes a serious constraint.

That is why wireless and fixed-line are complementary technologies.

Furthermore, mobile data usage is more expensive than fixed.

This is reflected in the relative prices for mobile and fixed-line broadband plans.

An analysis conducted in March by Market Clarity said that:

“mobile Internet access remains far more expensive than fixed broadband...”

Market Clarity found mobile broadband data can be between 27 and as much as 1,333 times more expensive than data over fixed broadband.⁸

As we will see, it is hard to know what the real Coalition plan for wireless is.

In summary, Mr Turnbull is offering three technologies: FTTN, HFC and wireless.

All of them are limited in their ability to provide Australia with the broadband we need.

In a recent analysis of Mr Turnbull’s plan, Citigroup found, and I quote:

⁸ Market Clarity – ‘The Cost of Mobility: Comparing the Value of Fixed and Mobile Broadband’ – May 2011

“The rapid speed demand growth observed in the past indicates that demand in Australia is likely to exceed the capabilities of what the Coalition plan can deliver sooner rather than later, requiring nation-wide upgrades to keep up.”⁹

Let me remind you of the speed projections to which Citigroup refers.

The NBN has an upgrade path well into the future to meet this demand.

Here is what Mr Turnbull is planning.

He is planning a network that will be obsolete by the time it is built.

He will leave us stranded and locked into today’s speeds.

⁹ CitiGroup Global Markets report, November 2011

Mr Turnbull tells us there will be no growth in demand for bandwidth.

All this extraordinary growth in internet data, the growing demand for download and upload capacity.

That all ends today.

There will be no more innovation from the likes of Apple and Google.

And no new products or applications from companies we haven't yet heard of.

According to Mr Turnbull, no one, anywhere in the world, will develop anything new.

And how much will it cost to limit our future? We don't know - he hasn't costed it.

But we do have one independent costing.

Citigroup has priced Mr Turnbull's build at \$16.7 billion.

This cost does not include access to Telstra's copper or structural separation.

The problem Mr Turnbull has is that he has no plan to deliver structural separation.

Mr Turnbull says:

*"We support separation. We recognise that it would enhance competition."*¹⁰

He says:

*"structural separation is the best outcome. I also think it's the best outcome for Telstra shareholders..."*¹¹

¹⁰ Malcolm Turnbull, speech to Parliament, 15 November 2010

¹¹ Malcolm Turnbull, Press Club address, 3 August 2011

Well, Mr Turnbull must know more about Telstra's interests than Telstra's board, management and shareholders over the past decade.

The fact is, Telstra has never contemplated voluntary structural separation without an incentive.

We are left to trust that Mr Turnbull's own skills of persuasion will right the structural wrong left by the Howard Government.

The worst part of Mr Turnbull's plan is how it abandons regional Australia.

Under the NBN, wholesale prices are the same nationwide, whether you live in the bush or the city.

Yet he opposes the NBN's uniform wholesale pricing.

This will entrench the digital divide that exists today between regional and metropolitan.

Mr Turnbull knows regional Australia will be facing higher costs.

He advocates handing out vouchers directly to regional consumers.

This is a shameful attempt to shroud the fact he will treat regional Australians as second-class citizens.

Under the NBN, 70 per cent of regional Australia will receive fibre to the home.

Places like Warrnambool, Goulburn, Mount Isa, Geraldton, Bernie and Mount Gambier will receive fibre to the home.

The future for these towns under the Opposition is not clear.

Two months ago, Tony Abbott, dismissed fibre technology, saying it had “already been bypassed” by wireless.¹²

¹² Tony Abbott, *Today*, Channel 9, 30 September 2011

According to him, wireless is all we need.

But just last week, the Nationals, in their 2011-12 policy, called for fibre to over 50% of homes in regional Australia.

Meanwhile, Mr Turnbull continues to commit the Coalition to providing FTTN and wireless in regional Australia.

So they have three different and conflicting policy positions.

Different positions between two parties in coalition and two competing colleagues.

The one certainty is regional Australia will be dramatically better off under the NBN.

But enough about their negativity.

The truth is, the NBN isn't about politics. It is about the future.

The NBN is integral to the Gillard Government's vision of Australia as prosperous, egalitarian, inclusive and connected.

Like water, roads, rail and electricity, broadband is fundamentally important to the economic growth of all nations.

Every month, a new study is released demonstrating broadband's economic benefits.

For example, Deloitte Access Economics found the internet contributed \$50 billion to Australia's economy in 2010.

They estimate that by 2015 the Internet's contribution to our economy will increase to \$70 billion per year.

The continuing growth of the digital economy is a positive development for Australia.

It means our students will be able to take a chemistry or mathematics class taught by teachers in another city.

It means our grandparents will live at home longer, monitored by nurses and family remotely.

This will reduce pressure on health budgets.

It means better services for the disabled, and better opportunities to lead fulfilling lives.

It means businesses will run more efficiently, with greater collaboration and innovation.

They will have improved access to new markets – around the country and the globe.

Make no mistake, the digital world changes everything.

Broadband is a profoundly disruptive development.

It transforms virtually every sector in our economy.

From healthcare and education to retail and media, broadband is changing the world.

I need not point out here its impact on the business models that support journalism.

Online retailing is another prominent example of how businesses need to adapt. We have seen this with Amazon and iTunes.

But this is just the tip of the iceberg.

Today, you can shop in a Korean supermarket while walking through a subway station on the way to work.

Using your smart phone, you can scan the barcodes of products from virtual supermarket shelves displayed on the walls.

Your completed order is transmitted back to a warehouse, and delivered to your home that evening.

This is just one example of how the world is changing.

Labor is the party of nation building.

The NBN is a prudent investment in the long-term productivity, growth of our whole economy, and Australia's future prosperity.

Every industry, every small business, every member of the workforce will be more productive by having faster access to better information.

Labor is the party of inclusion.

Like Medicare and universal superannuation, the NBN is about benefitting the entire nation.

We expect the conservatives to oppose reforms like these.

But eventually, like Medicare and super, they become part of the accepted social fabric.

We want all Australians to participate in the digital economy.

We want all Australians to benefit from better broadband.

I want to leave you with a quote:

“In a period in which we in Australia are still, I think, handicapped by parochialism, by a slight distrust of big ideas and of big people or of big enterprises ... this scheme is teaching us and everybody in Australia, to think in a big way, to be thankful for big things, to be proud of big enterprises.”

That was Sir Robert Menzies, in 1958, who after years of Conservative opposition to the Snowy Mountains Scheme, ultimately embraced it.

The NBN is the big idea for our time.