

CommsDay Wholesale Congress – Dr Rob Joyce speech as part of the nbn

Showcase

Introduction

Thanks Sarah.

Good afternoon, looking out I can see many familiar faces, and some of you may be thinking, isn't that the guy who used to work for Nokia a few months ago?

And the answer is, yes, it is me but a new me ... you could say, I saw the light in Fibre.

But seriously why did I move?

And on this occasion I'll tell you because it closely relates to what I will be talking about today.

Until recently I had worked in the mobile industry for my whole career.

At my previous job as Nokia's CTO here in the region I'd like to think I helped ever so slightly turned around Nokia, locally at least, to be known as one of the leading technology innovators in the country. For example, which other vendor has used 5G to count sheep in Tamworth?

But, that said, on occasion while still at Nokia I would look across the proverbial tech road to **nbn** and saw this remarkable piece of infrastructure and I wondered why it had not been embraced by the people in this room or, more importantly, the whole of Australia in a similar way to 5G.

After all, as we've just heard from Sarah, the **nbn** network is a unique, pioneering piece of critical national infrastructure, built by Australians for Australians.

It handles more than 80 percent of all Australia's fixed line traffic.

It helped get the nation get through COVID – how else could our kids have watched Netflix rather than do their school work?

And, it will be the defining factor in Australia's digital future.

So, when Stephen asked me if I wanted to be part of that future, and to help him, Anna and the **nbn** team better promote this national asset and the future it will enable, I jumped at the chances to show what Fibre, 5G and Satellite combined can do for Australia.

Where we are at now

So where is **nbn** today and what part will it play in Australia's future?

You heard where we're going in the short term from Sarah, but in the longer term, to put it simply – we haven't even scratched the surface of what this network can do.

For example, if you've already upgraded to **nbn** Full Fibre Internet (if you haven't, check out our new website to see if its available in your area, yes Anna constantly reminds me - Rob you're in the sales team now!)

Then that fibre to your house or business – that thin strand of fibre can currently deliver close to 1Gbps if you're on one of our fastest residential speed plans.

But actually, that piece of fibre already has the potential to carry data at speeds of over 1 Petabits, in fact the current worldwide record on a single fibre over 20km is around 1.7 petabits and for those of you who forgot peta is 10 to the 15.

So what does it all mean?

It means that even if you're on a 1Gbps plan (Giga is 10 to the 9 by the way) you're currently only utilising about 1 million of that fibre's potential.

Now, I know the entire **nbn** network is not fibre yet – although I'm glad to say more of it is becoming so every day (again check out the website to see if you can upgrade) – but where we can't deliver fibre, we will use the next best available technology, be that Hybrid Fibre, 5G millimetre wave FWA, GEO or LEO satellite technology.

Advantages of fibre

But staying with **nbn** fibre for a minute, it has many advantages over its copper predecessors

- Clearly it's faster, for homes and businesses
- it's also more reliable (fewer things can go wrong)
- it's more power efficient, compared to copper and 5G
- And its potential is only just being realised

So in summary Fibre is Faster, Fibre is More Reliable, Fibre is Greener, and Fibre is Fit for the Future.

Fibre is the future

So let's now look to that future. Let's take a look at a two examples of what a future powered by **nbn** fibre may look like.

1. Consumer Use Case

In the consumer space I'll start with a really simple example – entertainment.

Do you remember the screech of dialling into ADSL – the slowness, the frustration, but also the acceptance because that's the best you could get at that time.

Well, in the not too distant future we will look back at where we are at now and think the same way.

Most Australian households are currently on a 50 Mbps broadband service, sounds a lot for an individual right? But most people don't live alone and even if they do, if we look at things from a devices point of view they're certainly not alone. Today the Aussie home now has around 21 connected devices, Phones, iPads, Laptops, TVs, Smart Speakers, Security Cameras, Games Consoles and therefore we're certainly reaching the point where at 50Mbps the experience is beginning to suffer.

Take 4K sports streaming as an example, while it can be done with a 50Mbps connection, you're not going to be too happy when it starts to degrade because your kids are on video calls to their mates while playing on the PS5 and that's before your phone has decided to do its nightly app updates. And all that is before I've mentioned your significant other is on an important teams call to the US trying to work on a shared PowerPoint for tomorrow's meeting or maybe they're also trying to watch something else in 4K in the other room at the same time because they're not a sports fan.

And that's 4k, 8k is coming as is 4K+ Spatial video (immersive video). According to Apple Spatial Videos filmed by iPhone 15 will be able to be played back on their upcoming Vision Pro device, two 4k+ streams on a single device!

So to get the best experience of these technologies households already need more than 50Mbps if they want the best broadband experience today and as residential bandwidth requirements scale, **nbn's** fibre-based network is best placed to deliver this.

2. Business User Case

As for Businesses they normally tend to precede what Residential users need.

For a few years now it was IT connectivity and Video conferencing that was driving peak bandwidth demand for businesses.

But more recently we see businesses needing more speed for new and novel applications driven by big data, Machine Learning and Artificial Intelligence.

Take the high street retail sector for example, it's already been mentioned by a number of high street retailers that they will introduce more video surveillance into their stores. We can imagine a future where rather than have back office staff review these video multiple streams in realtime, we will feed these video stream into the cloud, where AI does the heavy lifting:

- Counting the foot fall, dwell time per aisle, watching which items people pickup and then put back the most.

- Analysing the demographic of the stores customers
- Checking for spillage or re-stocking needs
- And monitoring for theft or anti-social behaviour

We're no longer talking about grainy images sent back to a control room, we're talking about multiple 4K+ video streams, sent 24/7 to a cloud service with enough GPU power to crunch this data in real-time.

3. *Other industries*

And it won't just be retail set to benefit from high bandwidth AI applications– we'll see seismic shifts in other sectors, from factories, farms, traffic control to hospitals etc.

Imagine how much more effective Radiology departments will become when they can instantly send a multi-Gigabyte scan to an AI application for analysis and have the results returned to the local Radiologist in seconds. Today scan transmission is done via email (but usually the file is too big) so even today we still have scans sent via DVD by courier or by post.

But for these kinds of enterprise and industrial applications we now start to talk of bandwidth requirements in the Gbps (that's 1000's of Mbps in old money).

Using Fibre Network Termination Devices that will literally fit in your pocket.

<Show small NTD device>

Again, at this point I hope you are also realising that again Fibre is the only option that enables business application like this at scale.

Conclusion

So in conclusion, the world is changing,

30 years ago, our households and business data requirements were close to zero.

20 years ago, we had dial up.

10 years ago, we listened to CDs and watch DVDs (when was the last time you held one?)

And just 5 years ago, you still had to watch Disney Movies via DVD.

Today most of our business needs, entertainment needs, navigational needs, retails needs are digitally enabled.

Industry is in the midst of what is known as the 4th industrial revolution again enabled by digitalisation, cloud compute and AI/ML.

Underpinning all of these needs is the network, and at **nbn** we have now built and continue to build Australia's network of the future.

No one in this room can say with any certainty where this ever-accelerating technology revolution will take us in the future – but there is one thing I can say with absolute confidence – the **nbn** network will enable it.

As Anna said at the start of this session, she wanted you to leave, knowing three things

1. that nbn will continue stay well ahead of the demand for data,
2. fibre is our future,
3. and that we will continue to work with you all to make the most of the **nbn**

And finally, before I finish, I want to leave you with one final thought.

We've talked a lot today about the future, and how the **nbn** network will breathe life into dreams, and make the seemingly impossible, possible.

When we talk about those things we often think of AI and VR, big tech and big business.

But the **nbn** network is already making its mark in so many ways, for so many people, and most of the time we don't hear their stories.

So today, I'll leave you with some Australians talking about how the **nbn** network, their network, has changed their lives.

Thank you.