JULIE McCROSSIN: Ladies and gentlemen, if you could take your seats… Has anybody not got a green ticket? 'Cause I'm about to draw the green. Lucky door in one minute. Anyone not got a green ticket? Anyone need a green ticket? I'm just about to draw. Ladies and gentlemen, welcome back. I'm very excited that we are going to now turn our minds to the nbn but, just before we do, we are going to two our lucky door for another of our Bluetooth speakers. I have Peabody here. A round of applause for Peabody who is so multi-tasked.

(APPLAUSE)

JULIE McCROSSIN: We have had another eight submissions to the Jetsons predictions of the future competition. How many have we had all up? Over 20. We have had over 20 submissions. Green F2. Fantastic! A round of applause. Thank you.

(APPLAUSE)

JULIE McCROSSIN: Ladies and gentlemen, it gives me great pleasure now to introduce our session on the nbn and how the nbn will adapt in an ever-changing environment. We're lucky enough to have JB Rousselot, the chief strategy officer with the nbn. You'll see JB's background in your program, extensive experience in telecommunications and media and qualifications in engineering and management and I know we'll have - we have been talking a lot about some of the dilemmas in the process of transition to the nbn but I have revealed to him that I'm on the nbn in Wellington, NSW, five hours west. I'm afraid we had a seamless connection and it's absolutely bloody gorgeous! So much faster than when I lived in Annandale. Please welcome JB Rousselot.

(APPLAUSE)

JB ROUSSELOT: Thank you. I couldn't have asked for a better introduction! First of all, let me acknowledge the great work that ACCAN does. Not just every day but convening this group, putting people in the room that are either players or stakeholders in the field. As players in the technology space, we provide a critical service to the community. We do so in an environment that never sits still because the technology keeps changing. There are new products and new services that keep being introduced. Most importantly, there are end users, customers, that take on those new services at an increasing pace. So we evolve in a very, very dynamic environment and making sure we are ready for every step of it is really critical.

Today I'd like to quickly remind ourselves about what is nbn's role in that ecosystem. I want to talk about some of those challenges and the opportunities that they represent. How do we answer them today and how we plan to answer them tomorrow. Then I want to spend a bit of time on probably the biggest challenge for us as an industry, which is to significantly lift the experience that customers have when they migrate and then use the internet.

Let me do it a quick piece of history. nbn is now in an its eighth year of existence, being created in 2009. It remains the largest infrastructure project in Australia. Ultimately, it will touch every home and every business in the country. The mandate that we have been given by our shareholders is to bring high-speed reliable broadband to every premise in Australia. It's a big challenge. It's a big call. And something that is not always easy to meet.

High-speed broadband is defined broadly as 25 megabits per second and above. Despite that being the definition most people would agree on, our task is to do that at the very minimum to every premise in Australia but we also plan on being able to provide 50 to most premises and even 100 megabits to a lot of premises in the footprint.

For the last three years we have been articulating our purpose for two things - connecting Australia and bridging the divide. Wherever you live in Australia, whatever your social demographics, your ability to pay, however complex it might be to bring that high-speed broadband network to your premise, our commitment is we will bring this to your premise. We bring this purpose to life with a number of quantifiable targets by the year 2020.

First of all, we need to have completed the rollout by 2020. So the network needs to be available to every premise by the end of 2020.

We need to do so within a cost envelope of about $49 billion. As we progress the build, we have been able to narrow more and more the range of that cost expectation. About two years ago, we had a range of about 10 billion. In the latest plan we released a couple of weeks ago, we have brought that down to just under 4 billion. 49 is still the target that we have.

By 2020, we want to have brought about 8 million premises on the network. That will trigger revenues of just under $5 billion per annum. We want to do so delivering an experience to our customers, whether they are the retail service providers which are our direct customers, or the end users and giving them a seamless, good experience in the migration and then in the use of the service.

Clearly, in order to do so, we will be needing to attract and retain really good employees because those are ambitious goals to achieve so being a top employer is one of the objectives that we have also.

How are we going so far? If you look at the graph on the left, it shows you have we have passed the midpoint in terms of the rollout of the network with over 5.7 million premises declared ready for service, so being able to order a service on the nbn. You can see, over the last couple of years, the significant ramp-up that has required to be able to reach that midpoint which we passed last year.

In the last plan that we released two or three weeks ago, we showed that this year, FY 18 will be our biggest year in terms of build. We will bring about 3 million more premises to be ready for service and being able to order a service. Then that number will start tapering down as we get closer and closer to completing the build.

If you look on the right, in terms of activation, so how many people are on the nbn? Over the last two years, we've been able to double and then double again the number of customers. We are right now somewhere between a quarter to a third way down our objective of 8 million customers on the nbn.

Then you will see that our peak year is expected to be fiscal year 19, so next year. On that year, we plan on bringing on to the network about 2.5 million customers. Then again it will start tapering down as we complete the network.

To give you an idea, every week right now, we bring on about 40,000 new customers on to the network. That's about 8,000 a day. That's about a thousand an hour. I'm going to be here for half an hour as we do a presentation and some Q&A. By the end of this half-hour, we will have brought in another 500 customers on to the network. The scale at which we have to do this is really big. When we say we are the largest infrastructure project in Australia, it is that type of quantity that is really hard and challenging to keep delivering day in, day out with a seamless experience.

So, not so bad. We've scaled, which is really important, but we still have a couple of big years in front of us, both in terms of activation and in terms of building the network.

Now let me talk about the opportunities or challenges that are facing us. It is clear that whether they're retail or business customers, people are using more and more data on the network that they're connected to. This translates into the number of bites or gigabytes. That grows 2% per month. 20-30% growth in terms of the data that comes down the network. The second thing is that part of that data is heavily driven by video. There are many applications and many usages that are pushing the data out but the primary one is video. Today it accounts for about 70% of the traffic that goes over the network. That is expected to grow and, by 2020, we expect that to be probably about 80% of the traffic that will go on to the network. When you think about the number of new programs, new content being made available on the internet, the fact that people are shifting from appointment viewing which was the traditional way they were looking at a broadcast signal being received and they move to their own decision on appointment viewing and, therefore, they do that on the internet and when you see the appearance of new television sets, of higher quality, 4K, eventually 8K TV, that video traffic is definitely going to continue to grow. As we go into the 2020s, it will become and remain the largest part of the traffic that goes over the network.

Then, over the last two days, I think you've heard a lot about the Internet of Things and how it basically drives the number of devices that will be connected to the network. A recent forecast was estimating, by the year 2020, every home would have on average 30 devices connected. I think it was 29. I was joking with Julie today, I look at my home, four people in the house, two very socially active teenagers, I have passed that threshold already. We all have computers, tablets and phones. On top of that, we have got a couple of entertainment devices that are connected to it. Last weekend I spent the time connecting six new watering systems that are connected to my phone. I know I might be an outlier, I might be a bit ahead of the average, but it's coming your way. There is no resisting it. Within a number of years, you will have a number of devices that are connected. They might be security, they might be health, they might be entertainment devices but that number of devices will continue to grow.

So when you look at the data being increasing, the video traffic increasing also and the number of devices, ultimately this drives a need for higher speed because, as you want to put all of that traffic down the pipe, the pipe needs to be able to handle higher speeds. So the network that we are building today, that delivers 25 to everybody and 50 to most and up to 100 to many of the premises, definitely caters for the app applications of today. Today 83% of the customers that take on a service on nbn select a 12 or 25 megabit per second service. There are few retail applications that require more than 50 megabits per second. The network we are building today definitely answers the need of the community today and probably well into 2020 and beyond.

But ultimately there is no resisting the fact that the speed and the demand for speed will come. Our challenge will become, in the future, to be able to bring that speed where and when it is needed so that we can answer the needs of the community.

The good news is we are already working on this. Every single of the technology that we have deployed on to the network has what we call an outbreak path, an ability to not only deliver the speeds that we offer today but an ability to eventually be upgraded to offer higher speeds. In FTTP - the fibre domain, technologies like GPON or XG-PON will take us beyond 10 gigabits per second. Whether FTTB or fibre to the basement which we use the copper network we take from Telstra, with the introduction of FTTC, we take the fibre further down the network and we jump off to use the copper network only towards the very end of that distribution. With that introduction, with the appearance of new technology such as G fast or G.fast, we think we will get well above one gig and probably all the way to five gig services on that copper network.

On the HFC network, the old cable TV network, we have Doxy 3.1 and something called progressively introducing distributed architecture which takes the fibre deeper into the network. Here again we have no doubt we can get to this one gig up to 10 gig services and probably beyond. That's for the fix.

On the fixed wireless, there is a number of new technologies coming typically referred to as 4.9G technologies. Things getting ready for 5G but will have an application in the current 4G network. Things called beam shaping so it allows to shape the antenna to service a narrow corridor rather than a broader distribution area. With that, we think we can lift the speeds we are offering on to the fixed network. Today we offer up to 15 megabits per second, we think we will get to 250, that's before we get into a 5G type of environment.

The satellite, you need to remember that the two satellites that we have launched are what the technology can offer today. They are the most advanced technology in terms of providing broadband via satellite link but they will remain the most constrained platform that we have. Once the satellite is in the air, there isn't much more you can do about it but, after a year of operation, we've been able to finetune the operation of the service, we have increased the throughput of the satellite from what was 135 gigabits per second to 180 per second and that has allowed us to offer and increase the peak time cap that we had offering by 50% and that will start, I think, October 1st, so very soon. So we'll continue to monitor this because it is really important for us to make sure we use the capacity as fast as we can by offering the fastest speed and the fastest caps that we can while still keeping enough capacity so as people take up the service, everybody can enjoy a good service around it.

The other thing we are doing with the satellite platform is very selectively looked at business-related products to make sure, again, we can service businesses that are in those remote areas without taking too much of a burden on the overall capacity of the platform.

Again, across all of the technology we deploy currently in the network, we have a great path that will allow us to take us to much higher speed a gigabyte and above. The question is when and where the demand will be there to justify the investment. FTTC, this is a technology that has come about a bit faster than we anticipated it and we have been able to react to it. Because we could fit it in within the 2020 completion objective and the $49 billion (inaudible) to the FTTC technology.

These are the challenges we see coming and this is how we plan on addressing them but, ultimately, the nbn is only one little link in the chain. We are that little blue donut you see here which we refer to as the local access network. At the end of the day, the retail service providers, their network and the way they connect to the broader internet and then, in-home, the individual's own network, whether it's wired or wireless, and the devices that they use, will have a big impact on the experience that people will have when they use a service that's wired by the internet.

It is really important for us to be very clear and very transparent as to where are each of the key links in the chain, the performance of each of those key links in the chain are and to optimise them.

The other thing that we need to do as an industry is the fact that, over the next three years, we plan on migrating 6 million customers. That's a really big number. That migration involves many players - the retail service providers, ourselves, our service delivery partners - either the people in the home doing the actual physical connection - and getting the chain to work seamlessly end-to-end is a big challenge. We need to do that to lift the experience customers will have.

That takes me to my last topic which was the focus on customer experience. I have showed you with the graph, as a business, we have been able to scale up so that we build faster and we activate faster than we were before and I've mentioned things like doubling and doubling again on a yearly basis. Our focus now really shifts to delivering a better customer experience for the migration of those customers. It starts with a customer becoming aware of the fact that nbn is available in their area. Then placing an order. Then having an appointment, having somebody turn up to their house, turning on the service, using it and when it breaks, fixing it really efficiently. That end-to-end chain is complex. We have spent a lot of time over the last 12 months looking at our internal processes. We do business process engineering or business process improvement. We continuously re-open the process, redesign them, sometimes starting back from scratch, zero-based design which we keep doing for our processes and finetune them to make them more effective and deliver a better experience. But we cannot do it all by ourselves. We need to work the industry, with the RSPs, with people like yourselves in the room, industry representatives, stakeholders, users' representatives to make sure that we clean up all of those processes, all of those links in the chain so that, from the day you become aware to the day you order a service to the day you ultimately turn it on and use it, we have as smooth as possible an offering.

We know we're not there yet. There's still a lot of work to be done but that's something that we have now started and we have created a number of forums that bring the industry together, the RSP, the service delivery partners, associations like ACCAN and other stakeholders, our shareholder minister organised a round table in Canberra to make sure everybody was there. That's something we will continue to invest a lot of time and effort so we can get it right.

Ultimately there is a massive important thing to do which is education. When you think about it, becoming aware of the nbn, knowing what to do to be able to migrate to it, is something that we need to communicate better. In that space, we really welcome the efforts that the ACCC have just done recently to help lift the understanding of what customers should expect in terms of speed performance, in terms of migration experience et cetera. It's an industry effort. It's one that is something that will continue for the months to come but it's one that we'll definitely play our role in. We welcome the role you will all play also in that space.

Before I turn it to questions, let me just wrap up a bit. The thing we are focusing on is still making sure we hit our target by 2020. We need to complete that network and bring customers on to it seamlessly. We need to continue to monitor demand, so how quickly the data growth comes, how quickly the video traffic grows, how quickly the number of devices in every home are growing. We need to be ready so that, at the time that the demand justifies it, we can actually continuously upgrade the network and offer the speeds that the community will need. But all of this is an industry effort. Again, we welcome forums like this one where we can hear from the community what are the concerns, what are the problems because, ultimately, as an industry, we need to get it right so that, by 2020, we have connected Australia and contributed to significantly bridging the digital divide. Thank you. I will welcome your questions now.

JULIE McCROSSIN: Thank you very much. A round of applause please.

(APPLAUSE)

JULIE McCROSSIN: Questions or comments, thank you. Do you want to introduce yourself?

>> Malcolm Moore. Yesterday we heard about farmers - it is costing Australia about $10 billion a year by not having good connectivity. The nbn has satellite provided to farmers. Farmers are business. Why has the nbn got it so wrong and has not provided optical fibre to farms with bi-directional equal speeds at every farm and why have they gone satellite? Thank you.

JB ROUSSELOT: It is a fair question, Malcolm. At the end of the day, you look at the size of the country that we operate in and it is a big country. What we look at is - what is the technology that we can afford to provide high-speed internet? When you think about the communities you are referring to, they historically would have had if they are lucky, a copper service and ADSL service. 25 megabits per second, when you talk about to the community around the world, is considered to be high-speed broadband. There might be specific applications. As I said earlier, one of the things we are doing with the satellite services is continuously see what we can do to potentially offer more business grade types of services to those communities. Ultimately we have to make a call on some of the technology we roll out. As I said, we have been able to offer 25 megabits to everybody in Australia. The satellite is a big part of that footprint. That's the thing we can do in terms of providing services in this area.

JULIE McCROSSIN: Did you want to make a final comment?

>> I could go on because I have been 40 years in the technology. Farms are business. The ADSL works under 2km - sorry, 910m for 24 megabits per second, which is virtually 25. There are lots of places where you can put over 80km connection of optical fibre, very cheaply, there is a whole lot of it in the country already that is not being used. I will leave it at that. I could go for hours.

CHRIS DODDS: Chris Dodds. For the last 15 years I have chaired a low-income advisory committee that Telstra liaises with in terms of providing low-income products for vulnerable consumers. Many of those products are now under threat because Telstra is no longer the network. The fundamental design of those products had to involve network structures and pricing that could then be adapted by the retail arm of Telstra. At this point in time, I've not seen one suggestion or seen nbn engage in the conversation about how products and services can be designed for low-income customers. Quite the opposite. The pricing structures that nbn are setting are, across-the-board, the same for every customer. There is no nbn product to meet the needs particularly of financially-vulnerable customers. So I would challenge your last statement because I think the end result of nbn's unwillingness or inability to engage in the needs of vulnerable customers is, in fact, going to deepen the digital divide in this country, rather than bridge it.

JB ROUSSELOT: Thank you, Chris. Let me explain a couple of things because I think we need to understand that, ultimately, the way nbn has been structured is to be a wholesale provider. We want to create a range of service, and we have in terms of speed tiers, so that ultimately retail providers - the Telstra, the Optus, the TPGs of this world - can then go and offer services directly to end-user customers. We believe, at this stage, with the 12 megabits per second product and the pricing of that product, we have given a network to the retail providers that could enable them to do that very targeted product offering that would service the community that you are referring to. If that's not the case, we are very happy to work with the retail service providers to help create that service. Because, ultimately, we want as many people on the network.

JULIE McCROSSIN: Do you want to comment?

CHRIS DODDS: I think the very nature of the products that the welfare agencies - Anglicare Australia, St Vincent de Paul, Smith Family and a range of others, including ACOSS, negotiated with Telstra actually involved negotiating a wholesale product and a wholesale price that then retail offerings could be designed around. So I think that's the critical part that's missing. It is no good just leaving it up to the retailers. The wholesale side of it has to also work in with it. I just think that, at the moment, despite conversations at a range of levels, there's been little or no response from nbn. Their response has been yours - it's up to the retailers. I challenge that as a basic proposition.

JB ROUSSELOT: I totally agree with you. It is not just up to the retailers. We have a role to play with it. To the extent we haven't with the entry prices, not provided yet a service or tier of products that can cater for that, that's something we are happy to engage with.

>> Laurie Patton from Internet Australia. In the United States, the FCC has decreed anything less than 25 megabits per second doesn't even count as broadband so it is a bit silly to call it fast broadband at 25. Simply, you can call it semantics if you like, but there is an upgrade path for satellite, there is an upgrade path for fixed wireless, even for fibre-to-the-premises but not for fibre-to-the-node. It is going to rip it out, replace it, it is going to cost billions of dollars, it will show things down. Even if you are finished in 2020, 40% of the network will have to be rebuilt in 5 to 10 years.

JB ROUSSELOT: I am not going to get into religious war. Around the world, we are not the only one investing in FTTN. The network we are building across all technology will have a upgrade path. Some of it might be reusing the infrastructure we are rolling out now. The timing of when we need to do that upgrade, that's something that is up in the air. At the end of the day, copper is something that will be used. With FTTC, all we are doing is stretching the fibre a bit further down the track. We are still jumping off and leveraging the infrastructure in the ground. We are not the only one around the world that does that technology and that approach.

JULIE McCROSSIN: I will get a quick response.

>> It is not a religious war, it is a technical question and a simple fact. Over the last 18 months, 80% of the new-build broadband rollouts around the world have been fibre-to-the-premises.

JULIE McCROSSIN: I will try, guys, I might take an extra five and we will take it out of the telcos, if that's okay.

JB ROUSSELOT: That's quite okay. Holly. In terms of customer experience, one of the issues is when you declare an area as fibre-ready, then there is a window of opportunity for Telstra to then put - to continue to supply and then they have to stop supplying. Apparently people are getting caught so that nobody is supplying. Are you working with Telstra and/or the government to actually say, "People are being caught in the middle of that, how do you get them out so they get a service instead of sitting there with no service?"

JB ROUSSELOT: Thank you for bringing this up. It was an issue but we think we have addressed it now. We have worked closely with Telstra to make sure when a customer get caught into that area where Telstra is under what is called C-cell type of opportunity but we haven't yet actually been in the position to activate that customer, Telstra will be able to go and provide that service. We know we had that issue. It was brought to us. We believe we have now addressed it because clearly we cannot leave during that period, customers that are still not able to order a service from nbn but are not able to do it any more from the previous provider.

>> Bruce Bevington from Western Australia. We have been on the nbn Sky Muster for 15 minutes now. A lot of criticism is made of the speed of the satellite but for those of us who are on it, it has been a huge increase in what we could get. That is overlooked by a lot of people. They are asking for more. But that's one thing that needs to be acknowledged. But in the review of the non-commercial losses of nbn to 2040, there was no reference made to how many satellite customers will be transitioned to fixed wireless or to cable and fixed - there was no mention because I don't think the question was asked in the inquiry. What is in plan for that?

JB ROUSSELOT: Going to the 2040 time frame is a bit of a stretch for us. As I said, right now, we have got a clear plan for completing the network by 2020. Depending on the demand, the demand will drive potential upgrade path and the timing at which we will eventually shift people from one technology to another. So when that demand comes in, what we'll need to do is make sure we do this and we do this efficiently. One of the challenges in particular for people in rural and remote area is that the cost of going and doing one of those activations, one-on-one is quite significant, so making sure we do this on a more batch-type of approach and rather than going to six different rolls, actually offer for one community we will be there for a given certain period to do that installation and upgrade will definitely be something we need to take into account when we get there.

JULIE McCROSSIN: Peabody! This is a girl we call Peabody! Her name is Rachel, she is a policy person with ACCAN, an economist.

We have heard a lot about how we will have lots of devices, they will be important for health and education, they will be tracking water leaks and all these kind of uses and they are going to be very low-use on the network but they'll need constant monitoring with apps or some kind of monitoring system. I was wondering how that's going to affect nbn, the kind of services you'll be offering and what consumers should know about the products they should be buying when they have 30 devices that are always talking to their app or phone or something?

JB ROUSSELOT: That's a really good question because it is true, when you think about the Internet of Things, there is a very vast array of devices that are being connected. Video is the one that requires the biggest bandwidth because of the amount of data that's required to create a high-definition picture on a big screen. When you think about the watering system I was mentioning, this is probably not even something that needs to be on all the time. When you think about some of the security systems that are now being offered, self-installed, they will need to be able to, as you say, very reliably send me a signal to say somebody has breached my property, here is a picture of that person at your door, things like this. It is a very broad range of devices that we are going to connect and they'll all have different needs in terms of speed or up time or download or upload time. So what we try to do is we create a range of plans and they come with specific download speeds, specific upload speed.

We hope the retail service provider use that range of plan and, to the extent we need to create some more, like was suggested earlier, we'll be ready to engage with the industry to try to do so but educating customers about what is the plan that best fits their need will be something really important. One of the things we have done recently is released this big brochure that kind of started to hint at what are the kind of typical usage that you have, what is a single user, what is a big family with many students consuming a lot of video content looks like and having that conversation with end users so they understand what is the best plan for them will become more and more important as you connect more and more devices.

JULIE McCROSSIN: I will bring our telcos on in one second but my final question is this: Do we have the workforce in Australia to drive this change, both technically and in communication with customers?

JB ROUSSELOT: It has been a big endeavour to actually lift the capacity of the industry, absolutely. We had a number of programs to create trainings, accreditation. There is at least about 60,000 people currently working on the nbn rollout. They are either people working directly for the nbn or through our delivery partners. The industry has lifted their game. There are some technology where we are still trying to bring on enough people to do so but it's been great to see the industry step up and young, new people enter that sector and being ready to help us build that network.

JULIE McCROSSIN: Ladies and gentlemen, thank you so much, would you please give a round of applause to JB.

(APPLAUSE)