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**ELECTRONIC LODGEMENT**

Dear Sir or Madam

**CEO speech: Connecting with the Future**

In accordance with the Listing Rules, I attach a speech to be delivered by Mr Andrew Penn, CEO at the Committee for Economic Development of Australia lunch in Sydney on Thursday 9 July 2015, for release to the market. The presentation is Mr Penn's first as Chief Executive Officer and includes an update on Telstra's network investment plans in FY16 and FY17.

Yours faithfully



**Damien Coleman**  
Company Secretary

## **INTRODUCTION/SCENE SETTING**

Good afternoon.

In my first opportunity to speak publicly since becoming CEO of Telstra, I want to share with you our vision. Our vision to make Telstra a world class technology company that empowers people to connect.

That vision has three objectives. Three objectives I intend to champion during my time as chief executive.

1. Firstly, to continue to put the customer at the heart of everything we do
2. Secondly, to deliver world class technology; and
3. Thirdly, to continue to have the best telecommunications networks in Australia and I will be announcing today we are increasing our level of investment in mobiles.

This is the vision that drives me.

This is what we will be focussed on delivering at Telstra.

And these are the three topics of my address to you today.

## **CUSTOMER SERVICE**

I wanted to start by reflecting on the fact that in a period of incredible technological change, one thing remains more important than ever – customer service.

Telstra has spent the last five years executing a transformation programme designed to put the customer at the heart of everything we do.

When David Thodey was appointed CEO in 2009 he declared himself agent of the customer - I make the same commitment.

While we have made significant progress, we clearly have more to do.

We still experience too many instances of failure - where we do not deliver everything we should, where we do not make it easy for our customers to be successful.

In a world where technology innovation is accelerating our customers need us to respond by providing simple solutions at even greater speed

## **A WORLD CLASS TECHNOLOGY COMPANY**

And the reality is, the rate of technology innovation is accelerating.

For some this is uncomfortable, even scary.

However, far from being intimidated I see great opportunity.

I am a technology optimist.

I see great opportunity for those of us that embrace this change, great opportunity for those of us that embrace technology innovation and great opportunity for Australian companies and Australia.

Telstra is no longer simply a phone company - technology pervades everything we do.

Our vision, my vision is that we now take this to the next level and become truly world class.

And let me be clear here, we are very mindful of where we are today. This is not a declaration, it is a statement of deep ambition.

There are some areas where we are already regarded by our global peers as world class, such as network engineering and others where we need to do better.

## **TECHNOLOGY TRENDS**

So what are the trends that are driving the technological innovation we are experiencing today? I see three:

- Firstly, a massive shift to mobile;
- Secondly, the cloud; and
- Thirdly, advancements in machine learning.

## **DESK TOP TO MOBILE**

20 years ago there were less than 100 million mobile devices in the world. Today there are more than 5 billion.

The technology has advanced considerably, particularly since the introduction of the smartphone in 2007.

I am sure many of you remember Cray, the world's fastest supercomputer in the 1990s. Cray weighed over 2 tons, and drew 200 kilowatts of power. Today's Smartphones, the ones you have in your handbags and pockets have 50 times more computing power than Cray.

We have moved to mobiles as the primary device for many activities. Less than 10 years ago we used our mobile phone for making voice calls and texting. Today, it is what we use for emails, shopping, watching TV, banking and numerous other activities.

This year in Australia, the number of internet searches made from a mobile device exceeded those made from a desktop computer. Today, in Asia more people are connecting to the Internet for the very first time from a mobile device than from a desktop. Indeed many may never use a desktop.

Globally, mobile data grew nearly 70% in 2014.

And of course the new significant trend we are seeing is the Internet of Things. Billions of connected devices from vending machines to mining equipment, aircraft engines and their componentry, agricultural sensors and cars.

As part of a regular trip to Silicon Valley last week, I was at the Tesla factory. We talked about the future of connected electric vehicles and their plans to build a battery manufacturing facility in Nevada in anticipation of increasing demand for their battery storage technology.

Telstra provides the sim card connection for all Tesla model S electric cars in Australia to our extensive network. This allows the driver to stream music while driving, use the Tesla mobile app to turn on the car's heating while getting out of bed on a cold morning and over the air software updates from Tesla to make the car better over time, adding new features during each update.

Connected things or the Internet of Things is the fastest growing part of our mobiles business today.

## **ON PREMISES TO CLOUD**

The second area of technology innovation driving change is the cloud. Moving computing off premises to a data centre and virtualising all on site and mobile devices.

There was a time when it would have been almost unthinkable for companies to outsource critical parts of their IT.

Cloud has changed that.

The power of the cloud is driven by the ability it creates to share infrastructure and store and retrieve information more economically.

A recent Research study of large Australian companies showed 86% are now using Cloud in their production environment.

And for consumers we can back up our data to the cloud so we don't lose all of our photos if we lose our phone.

The most complex aspect of the cloud though is not running the data centre or the software - it is not a complex IT problem in the conventional sense.

It is getting the data in and out of the cloud at speed and securely through the network. This is a telecommunications challenge and it is why Telstra is the leading provider of hybrid cloud solutions in Australia today.

Our differentiated cloud capability is integrated with Telstra's Next IP network and leverages strategic partnerships with global cloud providers like Cisco, VM Ware, Microsoft and Amazon.

In April we completed the acquisition of Pacnet. This is a key strategic asset as it provides critical network infrastructure to expand our cloud services in the region.

Combining their extensive network of submarine fibre optic cables and data centres with ours we now represent about one third of all lit data capacity in the region.

Our cloud business has been growing at 20-30% per annum over the last 3 years - with Pacnet we are very well placed to continue strong growth in the future as we expand into Asia.

## **ADVANCEMENTS IN MACHINE LEARNING**

The third and perhaps most significant area of technology innovation is machine learning. It is significant because of its potential effect on society and jobs.

We are all familiar with big data which will accelerate with the trend of connected devices and cloud.

However, it is the combination of this, with advancements in machine learning, that is taking us into the world of artificial intelligence and it is in this area that the rate of innovation is accelerating the fastest.

Through advanced algorithms, computers can now see and hear better than humans and can learn as we provide them more data. Computers can now diagnose and prescribe treatments for a range of illnesses including cancer with speed and precision and at scale.

The massive increase in computing capacity supported by the cloud has been particularly important. Recently Stanford researchers put together a computer system for \$40k combining CPUs or traditional computers with GPUs - graphic based technology.

The system can handle 11 billion learning parameters. Imagine the innovation ahead as this level of compute power becomes available to start ups and innovators more widely.

You have heard of Watson the computer that won Jeopardy the TV quiz show in 2011.

Watson has moved on from a scientific experiment and is now being used in the professional healthcare sector as a clinical decision support system. It can digest and analyse every one of the one million scientific papers produced annually. Most medical researchers can get through around 300.

## **IMPLICATIONS**

So what are the implications of these trends?

Four weeks ago CEDA published a report - *Australia's Future Workforce*. The conclusions were profound.

The report says more than five million jobs, almost 40 per cent of all Australian jobs that exist today, have a moderate to high likelihood of disappearing in the next 10 to 15 years.

Machine learning is the biggest driver of this because of its implications for the service industry. In future, many traditional services type activities will be done by computers more quickly, more cheaply and more accurately.

Many leaders, including Telstra Chairman and BCA President Catherine Livingstone have used this forum and others to identify where policy makers need to focus our response.

It is why there are many calling for a radical redirection of resources and training into STEM skills – science, technology, engineering and mathematics.

There is a critical need to introduce and support foundational technology and digital literacy skills in Australian schools.

It is why the Telstra Foundation is the principal supporter of Code Club Australia teaching primary school children how to write code by helping them develop computer games, animations and websites.

This initiative is already beginning to develop a new generation of code-savvy, computationally literate young Australians.

This is about building a solid and relevant digital skills base for Australia for the future.

The shifts in technology are profound but, far from being a death knell for the modern workforce, I strongly believe technology innovation can bring enormous benefits to Australia.

The US software engineer and entrepreneur Marc Andreessen tweeted only last week:

*'End of work theories always make two fundamental errors: Underestimating future human wants and needs; and underestimating future entrepreneurs.'*

What the industrial revolution showed us was that the switch to mechanisation has significantly enhanced society's quality of living.

And that is what will happen through this digital transformation. It is about humans working closely with technology to enhance our lives, not being replaced by it.

As Andreessen says, *we would be wrong to underestimate our future entrepreneurs.*

However, this is not going to happen if we only sit by and wait for policy changes, we have to adapt and we must invest. And we must do so at a faster speed than we have ever done before.

That is why at Telstra we are investing heavily in becoming a truly world class technology company.

Let me give you two examples of where we are building new digital first businesses - intelligent video and electronic health.

## **INTELLIGENT VIDEO**

The ability to watch content over an IP network is fundamentally changing the media industry.

5 years ago the amount of TV watched on line was less than 5%. Today that number exceeds 30% and most is on a mobile device.

Video now represents more than 50% of all internet traffic.

As the media world moves to 4k, the new standard for high-resolution digital content, bandwidth demand will grow exponentially.

Anticipating this trend, over the last three years we have invested half a billion dollars through acquisitions in Silicon Valley, Stockholm and London to build out an intelligent video platform - Ooyala.

Ooyala's software and analytics help media companies differentiate through improving the speed and quality of their content delivered over IP to multiple devices in multiple form factors. From smartphones to tablets, tablets to laptops, laptops to Internet connected TVs and digital advertising boards.

## **eHEALTH AT TELSTRA**

We are also investing in electronic health.

In the last 18 months we have completed 15 acquisitions and partnerships in electronic prescriptioning, remote diagnostics, secure health record keeping, telematics and a range of other technologies.

These technologies have the capacity to fundamentally change the way patients experience health care and practitioners deliver their service.

For example, the Royal District Nursing Service nurses currently travel more than 10 million kilometres every year to visit their patients, often just to supervise them taking medication.

One of our products, MyCareManager reduces that need, reduces hospital admissions and re-admissions and frees nurses up to do more valuable work.

It does this by combining video conferencing, digitised patient records and medical devices to allow medical staff to monitor and care for patients remotely.

Last week we also launched ReadyCare based in a high tech purpose built telemedicine centre right here in Sydney. For many Australians access to a doctor is a major challenge given where they live and work.

ReadyCare is a telemedicine service for GP's that allows Australians to connect with a doctor over the phone or video, upload images and receive advice, treatment, diagnosis, referrals and prescriptions.

## **VENTURE INVESTING**

Just as we have identified and invested in the technology trends in video and health, we continue to look for the key emerging trends in other areas.

Through Telstra Ventures, we invest in start ups because that is where many of the new ideas and innovations are coming from.

Ventures, based in San Francisco and here in Sydney, has made 23 investments, in companies with technologies in mobile apps, cloud based solutions, security, 5g mobile technologies and a range of other cutting edge innovations.

Companies whose products many of your businesses are using today Docusign, Box and Zimperium for example.

### **INNOVATION MORE THAN JUST INVESTMENT**

But, innovation is about more than just investing capital. It is about building capabilities and changing culture.

One of the most important capabilities is in software and application development. Again quoting our friend Marc Andreessen

*'software is eating the world'*

His fundamental point being, it is software development that is causing massive disruption to traditional industries.

Companies are finding themselves competing with new types of competitors that have no background in their sector but that are inventing transformational customer solutions through the use of technology and software - Uber, AirBnB and Expedia are all examples of this.

In response we launched the Telstra Software Group and last month we launched Telstra's API platform enabling developers to innovate off our systems and network. We already have more than 3000 developers registered.

### **MURU – D**

We also run a start up incubator muru-D here in Sydney and work closely with universities.

We are encouraging entrepreneurs and software engineers to stay in Australia and develop their ideas locally.

Earlier this year we expanded muru-D to Singapore, to tap into the best digital talent in South East Asia.

## **TELSTRA'S GLOBAL INNOVATION NETWORK**

In conjunction with these initiatives, over the last three years we have built a network of facilities aimed at creating within Telstra, a global and virtual centre of excellence for innovation.

Here in Sydney we opened our Insights Centre earlier this year. It includes workshop spaces, partner pop-up installations, a connected home, hands-on technology demonstrations and customer collaboration areas all with state of the art connectivity and business technology solutions.

In August we will open a new purpose-built Innovation Centre in Melbourne. A world-class space for customers, staff, inventors, vendors and partners to prototype and innovate.

In, a first for Indonesia, also in August, we will open a Customer Experience Centre in Jakarta to support our Asian customers as they explore our technology and services.

## **INNOVATION SUMMARY**

Innovation at Telstra comes from our constant examination of the relationships and inter-dependencies between data, technology, and connectivity as well as customer needs.

It's about helping people to get the best out of technology ultimately providing access to the best networks off which to innovate.

## **INNOVATION BACKBONE – QUALITY NETWORK**

Which brings me to the subject of telecommunications networks.

Ultimately all digital innovation is dependent on the quality of the underlying network. It is our networks that are the enablers of the technology we use today. In fact technology runs deeply into our networks.

And that is why during my time as chief executive I am committed to make sure we have the best networks in Australia with the broadest coverage.

## **NETWORK LEADERSHIP**

Telstra is already investing billions of dollars and has been for many years.

Today I am announcing a further increase in that investment into our mobile network.

We will increase our total capex investments to 15% of sales for the next two years providing more than another half a billion dollars for mobiles.

In total, over three years to June 2017 we expect to have invested more than \$5bn into Telstra's leading mobile network.

We will continue to expand our 4G footprint to 99% of the population.

We will increase our overall footprint to more than 2.5m square kilometres which we believe is around double that of our next nearest competitor.

We will build in excess of 750 new mobile base stations, increasing the total network to over 9,000 sites and bringing coverage to new communities in regional Australia.

We will deploy in excess of 750 small cells providing in-fill in areas of low signal strength.

We will start rapidly deploying the next generation of LTE technology including voice over LTE, LTE broadcast and the next stage of LTE advanced delivering peak network speeds of up to 600 mbps.

By fully leveraging our superior spectrum holdings we will create new levels of coverage and performance leadership for 4GX.

We are committed to maintaining our network leadership in Australia - offering superior experiences for what matters most to customers.

Ultimately what customers want is better coverage, better call and speed reliability, fewer dropouts and faster downloads.

Importantly Telstra's network will be the best equipped to meet the explosion in video traffic that I have already spoken about and which today is already challenging other networks.

And it's not just about the cities. We are investing in regional Australia. Telstra was awarded more than 80% of the work in the Government's black-spot programme. We look forward to continuing to partner with government to provide network access to areas that would otherwise not get it.

Because we are committed to better coverage in the bush too.

There is a lot of noise from our competitors about the fairness of Telstra's superior mobile network. But it is there because, we have had the vision and we have been prepared to invest

.

Let's face it, all three operators have the capacity and the balance sheets to invest. The only difference between us is Telstra has consistently been prepared to do so.

It is Telstra that is putting up almost 90% of the capital from the industry to support the black-spot programme.

And it is not just about the mobile network. Last week we announced the launch of Telstra Air, our nationwide Wi-Fi programme providing our fixed broadband customers access to their home data allowance while on the move. A \$100m investment.

That's why we are also investing in point-to-point peer solutions for our business and enterprise customers.

That is why we are investing in innovation in network engineering and access technologies. Working with small cells and video optimisation to boost network performance, trialling balloon technology with Google to boost coverage where it is too remote to put a tower and experimenting with drone technology.

So as a Telstra customer, you know the commitment from us is crystal clear. We are not only investing, we are innovating to continue to ensure you get the best networks in Australia with the broadest coverage.

## **CONCLUSION**

Let me sum up by reiterating that this is an extraordinary time. Technology is taking us into a world of rapid change, constant innovation and competition.

It is a time of enormous opportunity, not one to fear.

While we may not know how this is going to play out. What we do know is that the ability to create, to innovate, and to stay focussed on our customers is going to be critical.

In the end this is really all about our customers – technology is simply a way to make their lives easier, your businesses better.

We also know that having the best network is going to matter to the next generation even more than it does to this one – and Telstra is going to make sure they get it.

That is why I wanted to share our vision.

To make Telstra a world class technology company that empowers people to connect.

1. with our customers at the heart of everything we do

2. world class technology; and
3. the best telecommunications networks in Australia.

Thank you.

ENDS