CommsDay Summit 2019 - April 9, 2019
CEO Keynote: What we need to get right as 5G dawns

Thank you Renee and thank you to Grahame Lynch and the Commsday team for inviting me here today.

For many years Commsday has made an important contribution covering the key issues and ideas across the telecommunications sector. You are a daily reminder of just how fast our industry is moving and how far we have come. As we stand here today this work has never been more important.

The end of this year – now less than nine months away - will see us at the dawn of the 2020s. We are already at the dawn of the fifth generation of mobile telecommunications technology, 5G. I believe we are also at the dawn of the fourth industrial revolution.

Business and society will be transformed over the next two decades by the technology innovation that is coming around the corner, and in many instances is already at our doorstep. It is our telecommunications networks that will deliver this technology innovation into the hands of our customers and define their competitiveness, their quality of life and more broadly our success as a nation.

There is no technology innovation happening today that does not rely on being connected via a telecommunications network. Telecommunications is fast becoming the most critical category of infrastructure for every business, every state and every nation.

However, there is no single telecommunications technology that alone can meet this challenge – mobile or fixed, 4G or 5G, fibre or copper, HFC or fixed wireless, satellite or radio - they all have a role to play.

When we look to the future as an industry - at the volume of data growing on our networks, the increasing demand for coverage, capacity and speed – we need every every technology in the telecommunications landscape to make a contribution and we need to optimise the performance between them.

It is crucial therefore that we have the right policy settings in place for our industry. The right policy settings to promote investment, to promote innovation, to promote competition, to promote safety and security and most importantly to protect customers and ensure digital inclusion.

These are high stakes and the quality of the decisions we make today on these important areas of policy will define our success as a nation. Whether we be network operators or regulators, government or business we have a duty to work together to get this right. That is why this is such an important conference at such a critical time for our industry.

And it is against this background that in my talk this morning I am going to address two things:

Firstly, why I believe we are on the cusp of the fourth industrial revolution, and why 5G will be the catalyst for the incredible technology innovation ahead.

Secondly, how do we make sure the policy settings for our industry deliver the best telecommunications to underpin this technology innovation for the benefit of all Australians?

A 5G dawn

So, let me start with 5G.

In the last 12 months at Telstra we have achieved many Australian and international 'firsts'. The world's first 5G wifi connected precinct, the world's first 5G mid-band commercial device connection, Australia's first 5G connected car and the first 5G video call. This places us and Australia front and centre on the international stage for 5G deployment.

We have 5G cells in every major city in Australia and a number of regional centres too. We have exclusive partnerships with some of the world's leading mobile device manufacturers to bring their first 5G devices to Australia and our customers on the Telstra network first. We also have the spectrum and capacity in the core to back it up.

But why, why have we been so determined to be a world leader in this space? There are definitely mixed views in the industry on 5G. Even in this room there are those that say 5G is over hyped and that the use cases are unclear.

But I have a different point of view and I would like to explain why.

From a mobile technology perspective 5G is essentially solving for three things - speed and capacity, latency and device density.

Firstly, speed and capacity. As we look as an industry at the forecast volumes of traffic on our networks over the next decade, our business case for 5G stacks up on its own through its ability to deliver a lower capex cost per gigabit of data.

The use of new technologies such as massive MIMO, beamforming and improved spectral efficiency will dramatically increase capacity and speeds compared to previous generations of mobile technology.

To cope with the increased demand for video, 4G had to be 10 times faster than 3G. As we move from standard definition video to HD, to 4K, to 8K, to 3D, and to augmented and virtual reality, 5G will need to be at least 10 times faster again than 4G, 100 times faster than 3G. And it will be.

The second thing 5G is solving for is latency. Latency will be the key to many of the future applications that are central to the technology innovations that are happening today. Doctors performing surgery remotely using tactile internet tools, automation and robotics in industry, autonomous vehicles, all need instant responsiveness far beyond what today's 4G technology can provide. 5G will deliver that latency.

The third thing 5G is solving for is device density. Connecting things other than phones and tablets is an already well developed technology. On average we are connecting 2,000 things a day to our 4G enabled CAT M1 and Narrowband IoT networks. These already cover up to 3.5m square kilometres across Australia. However, while 4G can achieve several thousand connections within each cell coverage area, meeting the demands of the future will require connectivity of hundreds of thousands to each cell. 4G cannot meet this requirement – 5G can.

Smart cities, smart factories, smart buildings, smart grids. In the world of the Internet of Things, virtually everything that can be connected, will be connected. There are predictions that as many as 20 billion devices and systems will be connected worldwide by 2020. That's next year!

5G will provide the device density to meet this challenge.

So, there is no doubt 5G will significantly outperform previous generations of mobile technology. It will bring incredible benefits to mobile networks and the customers using them. Of course its roll out will be phased, so it will take time to cover the whole country, but in the areas where coverage exists, the earlier adopters of 5G will get a dual benefit. Not only will they experience the features of the new technology first, they will also do so on a relatively empty network.

4G users will benefit too because capacity will be freed up as traffic starts to shift to 5G, as it did from 3G to 4G. But to look at 5G as a stand alone technology is to the miss the point of why it is so important.

The true transformative power of 5G is that it is arriving at exactly the same time as a number of other technologies are maturing. These include cloud computing, machine learning and artificial intelligence, software defined networks and network function virtualisation and edge compute.

As all industries and governments look to automation as a way to enhance customer experience and deliver productivity, sensors will be incorporated into virtually everything. These sensors will capture huge amounts of data which can be cheaply stored and processed in the cloud using incredible computing power. Artificial intelligence or machine learning engines will then turn this data into insights to drive automation and power robotics.

It is this unique convergence of technologies that will be transformational and have far reaching implications for every business, every industry, every government and every nation.

This is why many are calling this period a fourth industrial revolution as we enter the 2020s.

Entire transport systems managed and synchronised to the real-time movement of vehicles and passengers.

In agriculture, crops managed using precise data on local weather patterns, soil moisture and nutrients.

Fleets of drones being used for deliveries, search and rescue and deliver high-quality live video for news and surveillance.

In the US, UPS has now begun the first regular commercial drone deliveries using an autonomous quadcopter to deliver medical supplies in North Carolina.

Manufacturing and supply chain capable of learning in real time delivering incredible gains in efficiency and productivity.

The role of 5G will be to provide the connectivity with the speed and capacity, latency and device density that I have described.

A recent report from HIS Economics estimated that by 2035, 5G would enable $12.3 trillion of global economic output and support 22 million jobs. The Mobile Nation report released

yesterday estimates that by 2023 the economic benefit to Australia from mobile telecommunications will be $65 billion, more than 3% of GDP.

The research underscores the growing importance of our sector. At a practical level our telecommunications networks have become the platform for every technology in every business in every government in the country. Quite literally the speed, performance and vulnerability of our economy as a country has become inextricably linked with the speed, performance and vulnerability of our networks.

And that is why telecommunications has fast become the most critical infrastructure in the country and indeed globally.

And that is also why it is so important that we get the policy settings right for the sector. In this regard I want to offer four principles that I think we should follow.

Firstly, it is crucial that we develop policy that is pro investment.

Secondly, we must develop policy that ensures a level playing field for all telecommunications' technologies and which does not create unnatural distortion or bias to one technology over the other.

Thirdly, policy that provides for the same regulations for the same service regardless of the origins and industry of the provider.

And fourthly and most importantly, policy that empowers customers and promotes innovation whilst still protecting and including customers in this digital revolution, particularly those in our communities that are in most need of it.

Let me comment further on each of these.

Firstly, policy that is pro investment.

The one thing I know we will all empathise with, is that high quality telecommunications networks require an incredible amount of capital investment. This investment is crucial for the success of our nation. There is no point in applications' developers or managed services providers investing in great products and services if network providers do not have the incentive to invest.

Indeed capital as a percentage of sales in the industry has been gradually creeping up globally over the last 15 years as the industry copes with the insatiable demand for more data, speed, coverage and resiliency. It is estimated that globally the mobile industry will invest almost half a trillion dollars between 2018 and 2020 on just preparing for and rolling out 5G.

In Australia alone, the industry has spent on average more than $12 billion per annum on capex over the last three years. That's more than $36 billion.

The NBN has obviously been a big contributor to this investment, but in fact more than half of it is actually coming from operators such as Telstra. We will invest in the order of $4bn alone this year.

However, at the same time that capex is increasing, returns in the industry on that capex are reducing. This is unsustainable, as ultimately it will hurt investment capacity within the industry and lead to a degradation in the quality of networks. This is a global phenomenon but it is also happening locally.

Recent research from PwC found return on invested capital – or ROIC - for telecommunications infrastructure was just 7% in 2016, having declined from 12% in 2012. I would hazard a guess that is lower than the cost of capital for all operators in Australia. It is appropriate for regulators to look at the profitability of the telecommunications sector and ask whether customers are getting a good deal, but it has to be done through the lens of the amount of capital invested.

Competition is already intense in our industry as evidenced by falling ARPUs in both fixed and mobile and the increasing value of inclusions and data limits for customers. Competition is good for industry, but it would be incorrect to conclude that there is insufficient competition in Australia today.

My second point on policy settings, is that it is crucial to ensure a level playing field for all telecommunications technologies.

As a sector we love to debate the relative merits of 5G over 4G, mobile over fixed, fixed wireless over satellite. We often do so in a very binary way. However, the practical reality is we need all of these technologies to play a role.

When we look at the volume of data we need to provide for in the future and the demographic and topographic challenges Australia presents for telecommunications infrastructure, there is no one technology solution.

Everyone here has heard my comments on NBN wholesale pricing so I am not going to repeat them again here today.

But this is exactly the dynamic that that problem is creating - an unnatural bias to one technology over others as well as a disincentive to invest. Ultimately customers should not have to care what technology they are using, what they need is the most suitable and economically available technology to meet their needs.

My third point on policy is that it must provide for the same regulations for the same service, regardless of the origins and industry of the provider. I do not envy policy makers and regulators here. Setting and changing legislation and regulations is a complex and slow process. But the problem is technology is moving fast and the reality is sometimes our regulatory environment can struggle to keep pace.

Many of us here hold telecommunications carrier licenses or are broadcasters. Our licences impose significant obligations and liabilities on us. If we do not meet those obligations there are serious penalties.

However, many of the services we provide are mirrored in the OTT world which sits outside of our regulatory framework. Services such as Viber or WhatsApp do not have universal services or terminating obligations.

This is not a criticism of those companies, it is just a plea for a more level playing field when it comes to regulation.

On a related matter I wanted to comment on the awful terror attack in Christchurch last month, particularly our decision to block some sites sharing what we considered appalling content. I strongly believe that was the right thing to do. I would make exactly the same decision again today in the same circumstances.

My layman's view is that broadcasting is broadcasting and the rules and norms that apply around content must be consistent regardless of the platform from which it is broadcast.

There is no reason why social platforms should be in a different category so I applaud the government for recognising that.

In these situations, you follow your values and moral compass to make the right decision. However, it is better that we have accepted standards and frameworks in place and they are

targeted appropriately – in this case to the platforms that control the content, not the carriers providing the underlying service.

My final point on policy settings is that they must empower customers and promote innovation whilst still protecting them, particularly those in our communities that most need it.

Our industry is moving rapidly and the innovation in our sector is bringing incredible benefits for customers. It is critical that the regulatory frameworks do not hamper this innovation by being overly prescriptive and costly to implement.

I think our regulators do a great job in this regard and we need to encourage them to stay engaged with industry and support them in that task as we move into an era of even more rapid change.

At the same time, as is often the case in periods of rapid change, it is those in our communities that can afford it the least, that can be left behind.

For the last three years we have been providing a rich data source on exactly this topic for the industry and policy makers. The Telstra Digital Inclusion Index measures the availability of connectivity, affordability of connectivity and the digital skills with which to take advantage of connectivity and the technology it delivers.

The report covers gender, ethnicity, income, regional, remote and metro. What it shows is that across the nation, digital inclusion follows some clear economic and social fault lines and in general Australians with low levels of income, education, and employment are significantly less digitally included.

There is a substantial gap between richer and poorer Australians and the so-called 'digital divide' is also particularly acute in regional areas where in 2018 every regional centre recorded a lower digital inclusion score than the Australia-wide average for capital cities. The broad point is that too many Australians – and particularly regional and low income Australians - are simply missing out on the opportunities of the digital age.

Regulations need to recognise these divides such as for example, the basic telephony services that Telstra provides under the USO. There are many that are highly critical of the USO. So I want to use this platform to share a few facts.

Firstly, Telstra receives around $270m per annum to provide the many services under the USO. Of that we actually pay almost half ourselves so we are the biggest contributor to the costs of

those services. The Government pays approximately $100m per annum and the rest of the industry combined pays less than $50m. In other words, only around 20%.

Secondly, the costs of providing those services is material and on a per service basis have been increasing.

Thirdly, those services are incredibly important for millions of Australians who rely on the USO and that is why supporting the transition from USO to USG is so important to making sure customers are no worse off.

We have been very open with government regarding our willingness to work with them on any changes to their long term policy on the USO, including introducing new technologies. In the meantime, it would be irresponsible for us to take those away services, as suggested by some in the industry who do not like making their modest contribution towards them.

Indeed, if any of my competitor colleagues would like to take over the contract, please do see me after the event. I would be more than happy to pass the contract over to you on exactly the same terms we have it.

But I digress so let me conclude!

It is sobering to think shortly we will rapidly move from 3.5 billion connected phones in the world to 20 billion connected devices and things. It is a completely different scale of connectivity.

We are sitting at the dawn of the 2020s, the dawn of 5G and the dawn of the fourth industrial revolution. With telecommunications becoming the world's most important infrastructure there is a lot we need to get right in making sure our policies and regulations are well crafted, support competition, encourage investment and protect customers.

Done badly, even where policy has consumers' best interests at heart, it is the consumers who suffer the most through higher costs and less responsiveness to their changing needs.

Done well however, I believe we have an incredibly exciting future ahead, and we all have a role to play. And together I am certain we will deliver for the benefit of all Australians.

Thank you.