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ARTIFICIAL INTELLIGENCE: THE PILBARA'S NEXT FRONTIER

Good morning, everyone.

I'm Andrew Wildblood, the chief executive of Enterprise and Government at Vocus – the owner and operator of Australia's second largest privately owned fibre backbone network.

We're currently building out this fibre network right here into the heart of the Pilbara, in the single-largest digital infrastructure project ever delivered in Australia's mining and resources region.

Today, I'll discuss how digital infrastructure enables Industry 4.0 for mining and resources.

At its core, Industry 4.0 is about the fusion of the physical and digital worlds.

It's about the power of connecting physical systems, the Internet of Things, with emerging innovations such as artificial intelligence.

For many years now, Australian miners have been operating autonomous vehicles 24/7.

But now, we're entering a world where predicting problems before they occur is a real possibility.

Equipment at risk of failure can be maintained before it breaks down.

Digital twins can simulate and perfect complex processes in real time without disrupting operations on the ground.

Being future ready means every decision – from how we extract resources to how we manage or secure the environment – can be informed by real-time data.

Today, I want to talk about how vastly better connectivity and high-density computing are opening up a significant new possibility for the Pilbara: transformation through AI.

Technology companies and digital infrastructure operators like NEXTDC and Vocus are making some of the biggest investments we've ever made in bringing the promise of AI to life.

You've no doubt heard of Jensen Huang, the CEO of NVIDIA, whose company is making the most powerful AI platforms and just overtook the market capitalisation of Apple and Microsoft.

Jensen argues that AI signifies the dawn of a new industrial revolution altogether.

One thing is clear: the fusion of AI with connectivity everywhere and accelerated computing power close to industrial sites is going to unleash transformative innovation.

So, today, I'll unpack three key things:

Firstly, the forces driving this AI revolution.

Secondly, how Vocus and our partner NEXTDC are building the digital infrastructure required to enable it here in the Pilbara.

And thirdly, how the combination of these things will change the game for industries and communities in the Pilbara.

The future here will be shaped as much by the data streams and satellite beams above the ground as the resources below it.

OK. Let's explore how we can make this region a leader of a new industrial revolution.

OUR LIGHTBULB MOMENT

I saw a quote recently that really hit home for me – US tech industry commentator Seth Godin – predicting that "AI is going to be the biggest invention for industry since electricity."

In the economic context of every company and community needing to do more with less, it's clear that harnessing AI is going to be key to our future.

The mining and resources industry is already one of the most technologically advanced sectors in Australia.

It has the world's largest fleet of autonomous haul trucks.

And miners are investing heavily in AI to improve safety, efficiency, and sustainability.

But to fully capitalise on these advanced capabilities, the Pilbara needs digital infrastructure on par with Sydney or Singapore.

Why? Because you can't bend the laws of physics.

In mining, milliseconds matter.

When sensors are collecting data, AI models are analysing it, and decisions need to be made for an autonomous truck or drill rig, speed is critical.

You need serious compute power.

And you need it as close to the site as possible.

A nearby data centre can process and return data in under 20 milliseconds.

Pay attention to the pink dot on the slide here rapidly moving back and forth between a mine and a close by edge data centre.

If you have to send the same data to Sydney, that could be 80 milliseconds. That's the green dot, and it take a lot longer to go there and back.

And if you had to connect it to a data centre in the US – where many of the world's big AI training models are still running – you could be looking at 200 milliseconds or more – that's the yellow dot.

You might not think differences in thousandths of a second matter much.

But when you're multiplying those delays by the millions and millions of packets of data sent every hour, the delays really add up.

Particularly when you start to use the AI platforms for inference applications, where AI can draw conclusions about data it has never been trained on before.

That's incredibly powerful for industry. Inference models don't necessarily have to have seen a problem occurring before to identify or predict it.

So, coming back to network delays.

If it takes four times longer to get data to the east coast, that is going to have an obvious effect.

Over the course of a day, it could mean an autonomous truck fleet moves much less material.

Slow response to data being picked up on sensors could endanger workers' safety.

Over a year of operations, the lost production efficiency and potential costs in worker compensation could run into millions of dollars.

So, returning to that prediction that AI will be as important to industry as the invention of electricity.

Well, electricity transformed industry by making everything faster, cheaper, and more reliable.

AI, running in edge computing data centres, coupled with other tech that I'll speak about, will have a similarly profound impact on the resources sector.

But like electricity, AI requires well-engineered infrastructure, combined with resilient network infrastructure to operate reliably.

In five years, ultrafast connectivity, AI, and edge computing will be as essential to mines as electricity is today.

THE NEW DIGITAL INFRASTRUCTURE

And this brings me to my second point: how Vocus and our strategic partner NEXTDC are investing **billions** of dollars to deliver the digital infrastructure needed to make this possible in the Pilbara.

So, as you just saw, the centrepiece is Project Horizon – our new 2,000km fibre optic cable system stretching from Perth to Port Hedland through the Pilbara.

Horizon will start at 38 terabits per second capacity, upgradeable to 200.

To put that in perspective, that is just shy of the entire network capacity bought by all internet providers delivering services over the National Broadband Network in Australia, combined.

So, I can confidently say there will be no shortage of bandwidth in the Pilbara once Project Horizon is complete.

But it's not just about speed. It’s also about reliability.

Project Horizon forms part of a 15,000km continuous fibre loop between Perth, Port Hedland, Darwin and back to the East Coast.

This 'figure 8' design provides redundancy for the region's critical operations.

So, if there's ever a fibre cut on the primary path, traffic can immediately be rerouted via the alternative ring.

This resilience is crucial for industries where downtime can cost millions.

Our crews are currently in the Pilbara building the Horizon cable system.

This project has also given Vocus the opportunity to continue to work with the Traditional Owners across Australia in new lands we are passing through.

We've been walking the entire route with Traditional Owners to document sites of cultural heritage significance, working together to avoid and protect items of cultural significance side by side.

We're committed to continuing to strengthen these relationships, protect cultural heritage and respect Country.

Vocus also recently completed the Darwin-Jakarta-Singapore Cable system, or DJSC, injecting 40 terabits of additional international capacity to Port Hedland and Darwin.

It puts the Pilbara on the doorstep of the fastest-growing digital market in the world.

Over half of the world's population lives within a 6,000km radius of Singapore.

That's why it has become one of the world's most **critical** hubs for cloud computing and AI innovation in the region.

But Singapore is bumping up against real estate and power generation caps, limiting its ability to build more data centres.

You know where there's no shortage of renewable power? Northern and Western Australia.

Australia's location and stable political environment is also highly attractive.

Lately, we've been seeing global manufacturers looking to diversify their supply chains beyond China as the geopolitical landscape changes.

We're seeing the same trend with the global tech giants looking to distribute their compute workloads to geopolitically stable locations with plentiful power that are just a short hop away from the region.

This is where the top end of Australia has an incredible opportunity as the "Digital Bridge to Asia".

NEXTDC and Vocus are leading the charge in turning this opportunity into a concrete reality.

NEXTDC is building new world-class edge data centre facilities in Port Hedland, with Newman due to be completed in the coming months, along with major tier 4 data centres in Darwin and Adelaide.

They will all connect to Vocus' national backbone, including Horizon, and the Darwin-Jakarta-Singapore Cable.

Edge data centers will provide fast, local infrastructure for high-density computing, transforming Pilbara's industries.

And the most recent tier 4 data centre in Darwin will provide the digital infrastructure for the world's biggest global tech companies to take up residence in Darwin and serve all of Asia and Australia.

THE SOVEREIGN ADVANTAGE

If availability of digital infrastructure is the biggest challenge in enabling this next wave of industrial automation, security is the close second.

The cyber threat to critical infrastructure has never been higher.

Recently, we've seen nation states use malware to target everything from nuclear powerplants to mines.

In an increasingly volatile geopolitical environment, governments are starting to worry about physical threats to the global infrastructure that runs the internet.

That's why for Vocus, sovereignty and security are an integral part of what we do.

The government has declared the security and integrity of our critical infrastructure a national priority.

Vocus and NEXTDC are in lockstep with that mission, providing the secure-by-design digital foundations the Pilbara needs to underpin its continued growth.

Vocus is backed by Australian investors in Macquarie Asset Management and Aware Super.

We keep sensitive data on shore, in facilities operated by security-cleared Australian personnel.

And we even provide physically separated, multiple-path network topology for classified workloads.

And it's not just the Australian Government and the resources sector that benefits.

We see enormous potential for the Pilbara's growing role in a raft of other nationally-significant industries – from renewable energy to hydrogen production to defence.

In Exmouth for example, there are major new developments planned around submarine infrastructure and space communications.

An AUKUS facility near Exmouth will improve "deep-space object tracking", as Australia gears up alongside the UK and US to be ready for future threats to space infrastructure.

Similarly, Defence is lining up its digital infrastructure across Northern Australia and into key forward operating locations like Papua New Guinea.

LEADING IN LOW EARTH ORBIT

Low-latency satellite and private wireless connectivity are becoming mission-critical in today's geopolitical climate.

LEO sat technology provides fibre-like speeds anywhere in Australia, and Vocus was the first telco to offer Enterprise-grade Starlink broadband in Australia.

And we're staying at the forefront of the tech. We recently introduced a new technology that bonds multiple Vocus Satellite – Starlink services together.

One of our customers (pictured on this slide), uranium miner Heathgate Resources, has eight Starlink terminals bonded together achieving 1.3 gigabits per second speed in remote South Australia.

They originally put it in to provide streaming entertainment for their workers, but it ended up saving their mine operations after a fire took out an off-site comms tower used by the mine.

Our specially equipped shipping container in the car park demonstrates Vocus Satellite-Starlink bonding, and is providing the Summit's internet.

Our Vocus Rapid Satellite solution suite enables quick deployment of high-speed, satellite-connected Edge Compute, AI, and Private LTE nationwide.

The Pod was simply offloaded in the carpark and powered up in minutes.

It can also be rapidly deployed for disaster recovery.

During events like Cyclone Seroja, our Pod can be quickly deployed to provide essential connectivity and computing power.

It's equally useful in early construction works, temporary fly camps and exploration programs.

Take a look at the Pod first-hand in the carpark – we'd love to show you what it can do.

So, what does this sort of satellite technology mean for the Pilbara?

In a word, no more blackspots, no matter how far off the beaten track you are.

For the first time, we can deliver metro-grade connectivity to any site across Australia's entire landmass.

It means an exploration camp 500 kilometres into the Great Sandy Desert can have the same broadband as the Hilton hotel.

I've spoken a lot about high-capacity fibre and LEO satellites are transformative for the region, but another type of network is seeing rapid uptake — and that's private mobile networks.

These can broadcast a secure wireless network over vast distances in a way that Wi-Fi just wasn't designed to achieve.

We're blanketing the deep Super Pit at Northern Star's KCGM mine in Kalgoorlie with a private 4G network.

Their mining equipment and people now have over 90 per cent coverage, compared to their old Wi-Fi system which struggled to keep them connected 40 per cent of the time.

And that has translated into increased mine production.

The dispatch team can now see exactly what is happening across the site at all times, and use that information to tweak production processes for greater efficiency.

On a private mobile network, we can guarantee bandwidth for safety-critical systems like autonomous trucks, drone surveying and personnel tracking.

There's no possibility that the network is going to get bogged down with commuters scrolling through TikTok.

It can also be fully isolated from the public internet to protect against cyber threats to operational technology systems.

Some of the most exciting use cases we're seeing are leveraging the responsiveness of 4G and 5G networks.

These include autonomous haulage and drilling, where vehicles can work around the clock and mine operators can have full visibility of what every machine on the site is doing.

Here in the Pilbara, I'm delighted to announce today that Vocus is building a major new Private LTE network for Mineral Resources Limited's Onslow Iron Project.

It will cover the vast area of the mine as well as a private fully-fenced haul road all the way to the Port of Ashburton 150 kilometres away, allowing 330 tonne jumbo road trains to safely drive the route autonomously.

And the efficiency of this system means the mine is targeting to have among the lowest greenhouse gas emissions per tonne of iron ore in Australia.

This is a fantastic example of how smart technology and sophisticated network solutions can support reducing environmental impacts.

Given the safety and productivity benefits, I expect private 4G and 5G will become standard issue for big mining trucks within the next five years, just like air conditioning and power steering.

As we seize the opportunity to connect the Pilbara's industries with world-class digital infrastructure, we see an equally important opportunity to help the region's communities benefit from this transformation as well.

Low earth orbit satellite can help close the digital divide for the indigenous communities in the Pilbara who have historically missed out on the coverage that most Australians take for granted.

We're exploring how to support Kali-Tech Aboriginal Corporation in creating a First Nations-designed technology hub.

These solar-powered, satellite-connected hubs offer remote communities metro-grade connectivity and access to computers.

The Kaya Hubs can support telehealth consultations and training opportunities to help remote communities build capacity and stay well while staying on Country.

They are an ideal solution for a remote location – even where there's no grid power.

We're in the early stages of discussions with Pilbara Minerals that could see the first Kaya Hub deployed in Western Australia.

It's a great example of how cross-sector collaboration and partnerships could potentially support digital inclusion and bridge the digital divide.

CONCLUSION

The Pilbara's First Nations have maintained an unbroken 60,000-year connection to country.

I feel privileged that Vocus and NEXTDC can play a role in building a different layer of connection to this great region, through the digital highways and nerve centres over which so much positive change will flow.

The key elements I've spoken about today – fibre, data centres, LEO satellite, private mobile networks, and above all, artificial intelligence – are the rocket fuel for Industry 4.0.

This confluence of technologies promises to unlock incredible productivity, efficiency, and sustainability benefits for the Pilbara's core industries and communities.

But as I've emphasised, it all relies upon highly responsive, reliable and secure digital infrastructure to make it work.

With all of this in place, the Pilbara won't just be the engine room of the Australian economy.

And it won’t just be a thriving place to live.

It will be an example that the rest of the world looks to for innovation in resources, new energy, environmental resilience and shared opportunity driving a thriving symbiosis between communities and industry.

That's a Pilbara that Vocus and NEXTDC will move heaven, earth and a lot of red dirt to help realise, in true partnership with all of you.

Thank you.