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## BUSINESSNEWS

## ICT
### SPECIAL REPORT

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> **"** Cloud gaming and cloud computing is the future - Stephen Cornish

Stephen Cornish has led Pentanet since 2016. Photo: David Henry

# Lightning speeds in split market

Challenger telcos are deepening their WA networks as new technologies and structural shortcomings embolden alternatives to the NBN.

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IT'S been five years since Stephen Cornish, frustrated with his attempts to seamlessly play big multi-player games online, took his fixed-wireless internet service to market under the Pentanet banner.

Since then, Perth's reputation as an internet services laggard in a country infamous for poor network connectivity has receded, as the NBN's rollout has reached practical completion and digital-subscriber line access has been retired as a form of internet connection.

Pentanet's reputation as an upstart in the market has shifted in that time, too.

When the Balcatta-based ISP was first reported on by *Business News*, it had just made its first major marketing push after supplanting Healthway as the Perth Wildcats' principal sponsor ahead of the NBL's 2018 season.

Nowadays, the company's presence on the ASX has placed it in direct competition with established names like Telstra and TPG Telecom, as well as fellow challenger telcos like Adelaide-based Uniti Group.

It's a remarkable shift in the local market, given Mr Cornish's investor pitches were once heavy on background and explanatory notes for those less savvy with how the internet works.

"Back in pre-IPO days, I had the challenge to explain to everyone and the market about what these new technologies were, how they worked and how they were going to increase the performance of a network," he told *Business News*.

"On top of that, I had to also explain cloud gaming.

"I have these discussions now and people are up to speed with it."

These improvements in Perth's internet access and literacy largely track with structural improvements that have over time made less of a virtue of the use of telephone exchanges.

This was the main reason why DSL internet plans, made widely available by Telstra-owned infrastructure through the early 2000s, were inconsistent in a city replete with low-density housing and urban sprawl like Perth.

Networks operating on this infrastructure would result in services that diminished considerably after just a handful of kilometres, which meant the city was at a unique disadvantage in relying on it as a means of regular internet use.

Even at its highest performance, though, DSL was still only able to offer customers speeds of about 100 megabits per second.

Data from the Australian Competition and Consumer Commission indicates NBN's fixed-line services, which rely on fibre connections, can manage traffic exceeding 650mbps depending on the plan, with 100mbps speeds the norm.

Data-intensive activities like video calling, online gaming or streaming that were once reserved for those privileged enough to live in dense, low-rise suburbs are now, for the most part, accessible to everyone.

Commercially, that's meant greater activity in the market from retail ISPs, such as Aussie Broadband, which has extended its rollout of direct fibre connections in WA through this year.

Investors have largely backed the company's direction since it listed on the ASX in October last year, with its offer price of $1 per share nearly doubling on closing, and trading at just under $5 at the end of September.

Still, drawbacks on the national network are numerous, not least of

# Integrated ICT solutions ensure business continuity



**A**lmost everything we do requires some sort of access to a data storage facility, whether on your own business premise or served from a cloud environment. Typically, cloud services are provided by data centres, and you may have a primary and secondary location to provide an extra layer of redundancy to ensure maximum uptime of your operations.

Perth and Geraldton based business, Integrated ICT, provides innovative ICT solutions for clients throughout WA. The company has a high–speed fibre connection between its Geraldton owned data centre facility, the only regional centre of its kind north of Perth, and a tier 3 facility in Perth.

Integrated ICT Business Manager, Ehsan Haque, described data centres as the way people can virtually connect to their data from wherever they are with an internet connected device. He said the company's unique value proposition is that customers can house their compute and storage requirements in Perth, and replicate to Geraldton, or vice versa.

"Data Centres remove physical and geographical boundaries and allow our clients across WA to connect to their data from wherever they may be located."

"With 400 kilometres between facilities, we provide disparate geographical redundancy for our clients' data. This gives them additional protection, should one location become inaccessible, data can be made available from the secondary location to ensure business continuity."

"A few years back, one of our metropolitan local government clients was at risk of being impacted by approaching bush fires but they acted quickly to escalate their disaster recovery planning with our help. Within only a few days, their data was replicated to the Geraldton Data Centre giving them greater peace of mind."

"At the beginning of the pandemic, we also migrated entire client environments to a full cloud compute and data storage solution to give their staff more reliable access to operational systems," said Mr Haque.

Integrated ICT is currently upgrading the communications link between their Geraldton and Perth Data Centre sites to 10Gb/s to improve disaster recovery capabilities. The company has been providing cloud solutions and associated data centre services to businesses, Not For Profits and government organisations since the inception of Office 365 in 2001, and provide cloud hosted Infrastructure as a Service to many organisations varying in size from 5 seats to well over 400 seats.

**To find out more go to www.integratedict.com.au call 6374 8200 or email hello@integratedict.com.au.**

> 66 Fixed wireless is [a] niche that's developed around the country by individual operators that've built up regional customers with good service and brands - Tony Grist

Tony Grist is deputy chair of Swoop. Photo: David Henry

## How are major ISPs performing on the ASX?

| Name | Code | Share price at IPO ($) | Share price as at September 1 ($) |
|---|---|---|---|
| **Aussie Broadband** | ABB | 1.00 | **4.89** |
| **Macquarie Telecom Group** | MAQ | 18.00 | **77.36** |
| **Pentanet** | 5GG | 0.25 | **0.67** |
| **Superloop** | SLC | 1.00 | **0.98** |
| **Swoop** | SWP | 0.50 | **2.09** |
| **Telstra** | TLS | 3.30 | **3.93** |
| **TPG Telecom** | TPG | 10.00 | **7.06** |
| **Uniti Group** | UWL | 0.25 | **3.87** |
| **Vonex** | VN8 | 0.20 | **0.14** |

*Source: ASX*

all due to the sizeable number of customers still accessing internet through relatively inferior fibre-to-the-node technology.

The absence of connections that run direct to the premises is set to be partially resolved in the coming year with NBN Co having identified about 1.1 million connections for upgrades in the year to June.

In the interim, that's left fixed-wireless alternatives to fill the gaps in critical population centres.

Tony Grist, who served on the boards of Amcom Telecommunications, iiNet and Vocus, told *Business News* the market for these services was particularly pronounced in regional centres, such as the Gold Coast, Geelong and Newcastle.

Mr Grist is no slouch on the subject. Earlier this year, he and billionaire Andrew Forrest made substantial private investments in NSW-based telco Swoop, managing its merger with local

ISP NodeOne Internet and helping guide it to the ASX through a reverse listing.

The business has since gobbled up significant players in the local market, including ComComs, which operated 14 fixed-wireless towers in metropolitan Perth.

Later, it struck a $5 million, five-year deal with Orro Group to provide NBN enterprise ethernet services throughout WA.

Having issued shares at 50 cents each during its IPO, the company completed its first day of trading at $1.25 and has traded above $2 for most of September, which translates to a market cap of approximately $230 million.

"Fixed wireless is [a] niche that's developed around the country by individual operators that've built up regional customers with good service and brands," Mr Grist said.

"There's an opportunity to consolidate those operators that are

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private companies that've been built by IT people and entrepreneurs who've provided a good solution regionally and in the greater metro [areas]."

In the case of Pentanet, fixed-wireless technology is just a starting point for further growth, with the company having raised $20 million earlier this year to help fund optimisation of its network through use of Facebook-created terragraph technology.

While the company has built its legacy network through hundreds of fixed-wireless towers dotted around Perth's suburbs, the use of terragraph technology eschews capital costs required to build more towers in favour of unlicensed spectrum of short-range, street-level radio waves that propagate services through a mesh network.

In a practical sense, this removes significant constraints on network speed and user capacity at minimal to no cost to subscribers, enabling major expansion of the provider's customer base.

"Even though the speeds of what we do today are over and above what most people get on NBN, [we're] not just about doing what's mildly better," Mr Cornish said.

"We want to have a product that's 10 times better than the next, other solution in the market."

If successful locally, Mr Cornish said it could inform how bigger players in the market optimise their network in future.

"We are actually helping these larger companies advance their new technology and then demonstrate it in the market, which is exactly what they need," he said.

Rollout of this technology coincides with the provider's joint rollout of Nvidia's GeForce Now cloud gaming platform, a curiosity that was generally thought to be impractical if not unworkable in Australia until recently due to the structural deficiencies of the country's internet infrastructure.

Google spelled this out in not-so-subtle terms in 2019, when it skipped over the Australian market in launching Stadia, its flagship cloud gaming platform, in favour of North America and mainland Europe.

Internet speeds would almost certainly have been a factor in that decision. While fixed-line NBN connections would have delivered adequate performance, other technology mixes may have hampered the platform's implementation, given it had only just emerged from beta testing at launch.

According to OECD data, Australia's average internet connection is between 34 and 59 megabits per second, which would have only just met the threshold for Stadia's optimal performance.

For comparison, Colombia, Mexico, Greece, and Turkey are the only countries in the 38-member bloc with lower average internet speeds.

Mr Cornish is frank about the commercial impracticalities faced by other telcos seeking to deploy the servers needed to run cloud gaming at scale in Perth.

He reasoned, though, that as Pentanet had already rolled out the necessary infrastructure to test its network, it had the capacity to lead on providing cloud-based technologies.

"Cloud gaming and cloud computing is the future," he said.

"It's a massive new industry, it's going to be one of the highest producers of revenue on future next generation networks, and everyone in the know knows that."

### Regional connections

For all the improvements to internet access in Perth, options are far more limited for users in WA's regions.

Some bigger providers have stepped in to fill in the gaps, with Telstra partially funding the rollout of the federal government's mobile black spot program since 2015 through $660 million spent alongside federal and state governments to deliver 930 towers across Australia's regions.

Outside of specific programs of this sort, though, regional customers are at a distinct disadvantage when it comes to shopping around for providers.

According to David Povey, managing director of Orro Group-owned Comscentre WA, NBN connectivity is not uniform across the regions.

While he said NBN Co had addressed some of these issues by allowing regional users to choose their provider, capacity constraints in local exchanges can often force their hand towards costly alternatives.

"There are many towns with smaller populations that will not receive terrestrial service," Mr Povey said.

"Consumers and businesses in these towns are reliant on NBN satellite services that do not deliver equivalent performance or bandwidth."

In some cases, partnerships have helped rectify connectivity issues, with Mr Povey pointing to Orro Group's work with Catholic Education WA to secure government funding for a fixed-wireless network for communities in the East Kimberley region.

Increasing competition in the regions may yet hinge on infrastructure being broken up and sold off, as is

Stephen Cornish of Pentanet. Photo: David Henry

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expected in the coming years with the privatisation of NBN Co.

With the network having reached practical completion in December, the federal government has taken the initial steps towards selling off the company and its $51 billion network.

Several hurdles, including a Productivity Commission-led inquiry into the network's privatisation, remain, with a buyer unlikely to be locked in until after the next federal election.

It's difficult to pick a likely bidder, given the NBN's legislation explicitly prohibits retail ISPs as potential owners, which would likely rule out the likes of Telstra from making an offer.

That's without raising the spectre of Telstra's newly created infrastructure arm, InfraCo, fully spinning out and making an offer to assuage the concerns of regulators.

The company's balance sheet remains tight, with greater revenues driving a fall in the company's persistent losses from $5.2 billion to $3.8 billion in the year to June (the company carries debt of $23.8 billion).

More than 933,000 users were added to the NBN in that time while growing the network's total users to 8.2 million premises.

While federal and state grants can pay for necessary upgrades in areas without the requisite infrastructure, Mr Grist said regional users in sparsely populated areas could stand to benefit from having access to more 'competitive backhaul' in the network.

That's because stranded city centres are often limited in their ability to access the network, with infrastructure generally only owned by one provider.

"That provides incentives for cell [ular] carriers to put their local access networks in the back end," he said.

"If [the cost of renting the backhaul is] low because you've got competition, then the whole economics of providing a cellular service regionally becomes better."

# Data & Insights

## INFORMATION & COMMUNICATIONS TECHNOLOGY

*Ranked by number of ICT & technical professional staff in WA and then by total staff in WA
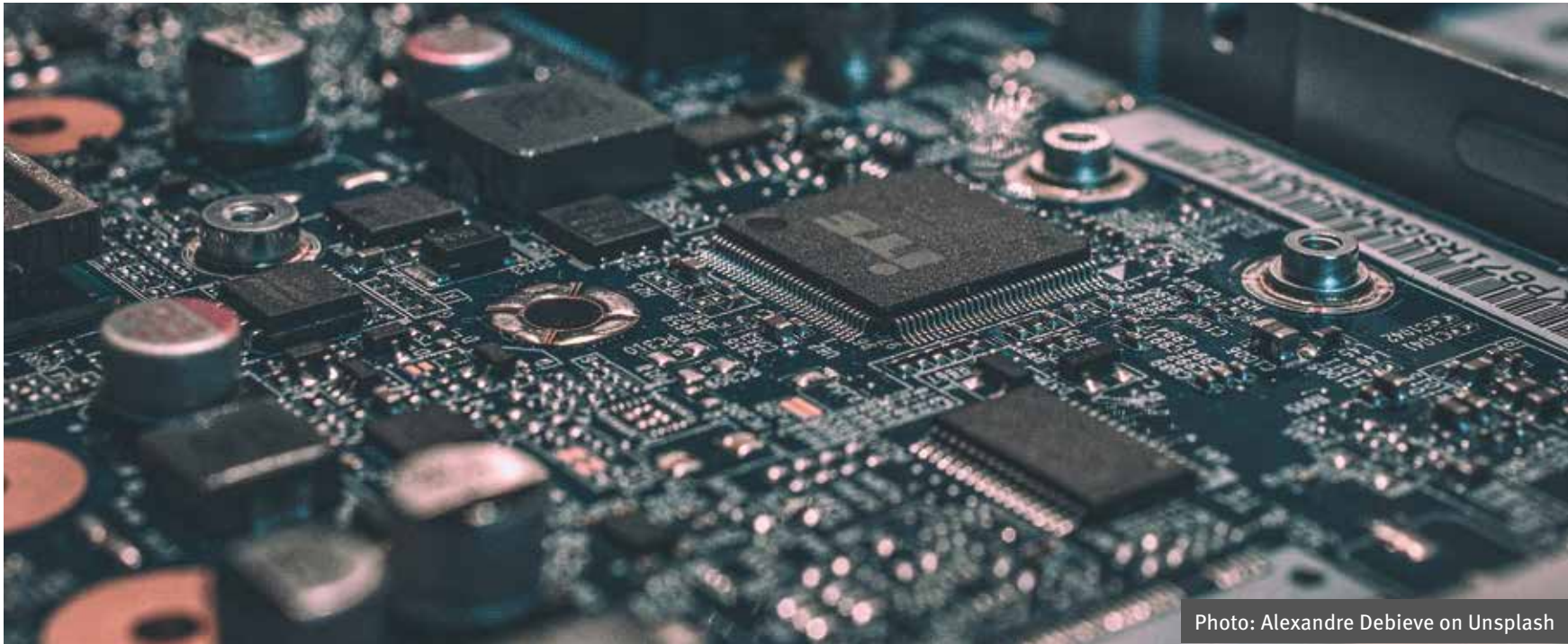


Photo: Alexandre Debieve on Unsplash

| Rank | Previous rank | Name | Highest-ranking executive and title | Total staff in WA | Number of ICT & technical professional staff in WA |
|---|---|---|---|---|---|
| 1 | — | Kinetic IT | Michael North - Chief executive and executive director | NFP | NFP |
| 2 | — | Modis | Omar Alim - General manager of delivery and account management | 572 | 531 |
| 3 | — | Empired | Russell Baskerville - Managing director | 430 | 390 |
| 4 | — | ASG Group | Dean Langenbach - Chief executive | 370 | 320 |
| 5 | — | DXC Technology | Mike Munson - WA state leader | 330 | 310 |
| 6 | — | Telstra Corporation | Malcolm de Silva - Head of Telstra enterprise WA | NA | NFP |
| 7 | ↑ | Accenture | Christophe Bourdeau - Managing director and upstream operational excellence lead | 302 | NFP |
| 8 | ↑ | Deloitte | Michael McNulty - Managing partner WA | 697 | 180 |
| 9 | ↓ | Vocus | Kevin Russell - Managing director | 204 | NFP |
| 10 | ↓ | IBM Australia | Jason Thomas - Senior partner | NFP | NFP |
| 11 | ↓ | Velrada | Robert Evans - Founder and chief executive | 140 | 140 |
| 12 | ↑ | Fujitsu Australia | Sandra Tuohy - Client engagement executive | NFP | NFP |
| 13 | ↑ | NEC Australia | Marcus Ashby - State manager WA | 150 | 124 |
| 14 | ↑ | Insight Enterprises Australia | Katherine Clayton - People and culture lead | 160 | 120 |
| 15 | ↑ | Data3 | Kingsley McGarrigle - General manager WA | 130 | 110 |

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WND: Would Not Disclose, NFP: Not For Publication, N/A: Not Applicable or Not Available.

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## WA innovators recognised in national awards

international Asia Pacific ICT Awards ...

## How technology in gold mines can boost productivity and keep workers connected with home

## Case Study: Enabling Remote Work with ICT Upgrade

project. "Ranbury had ageing on-premises ICT infrastructure and wanted ... was keen to see how a new ICT infrastructure might enable ... produce an "evergreen" ICT environment that would give ...

## New operations centre maintains Aurora laser focus on 3D printing

Minister for Innovation and ICT Don Punch opened the fit-for-purpose ...

## Integrated ICT a new name with a wealth of history

commenced operation, Integrated ICT . However, it is not a startup ... substantial growth of the ICT division and the desire to ... considerably talented and educated ICT professionals and loyal clients ...

## Kinetic IT alliance wins $504m contract

An alliance of four ICT firms led by Kinetic IT has ... Alliance, will provide end-to-end ICT services and create a local ... subcontractors, will provide ICT services to schools and support ...