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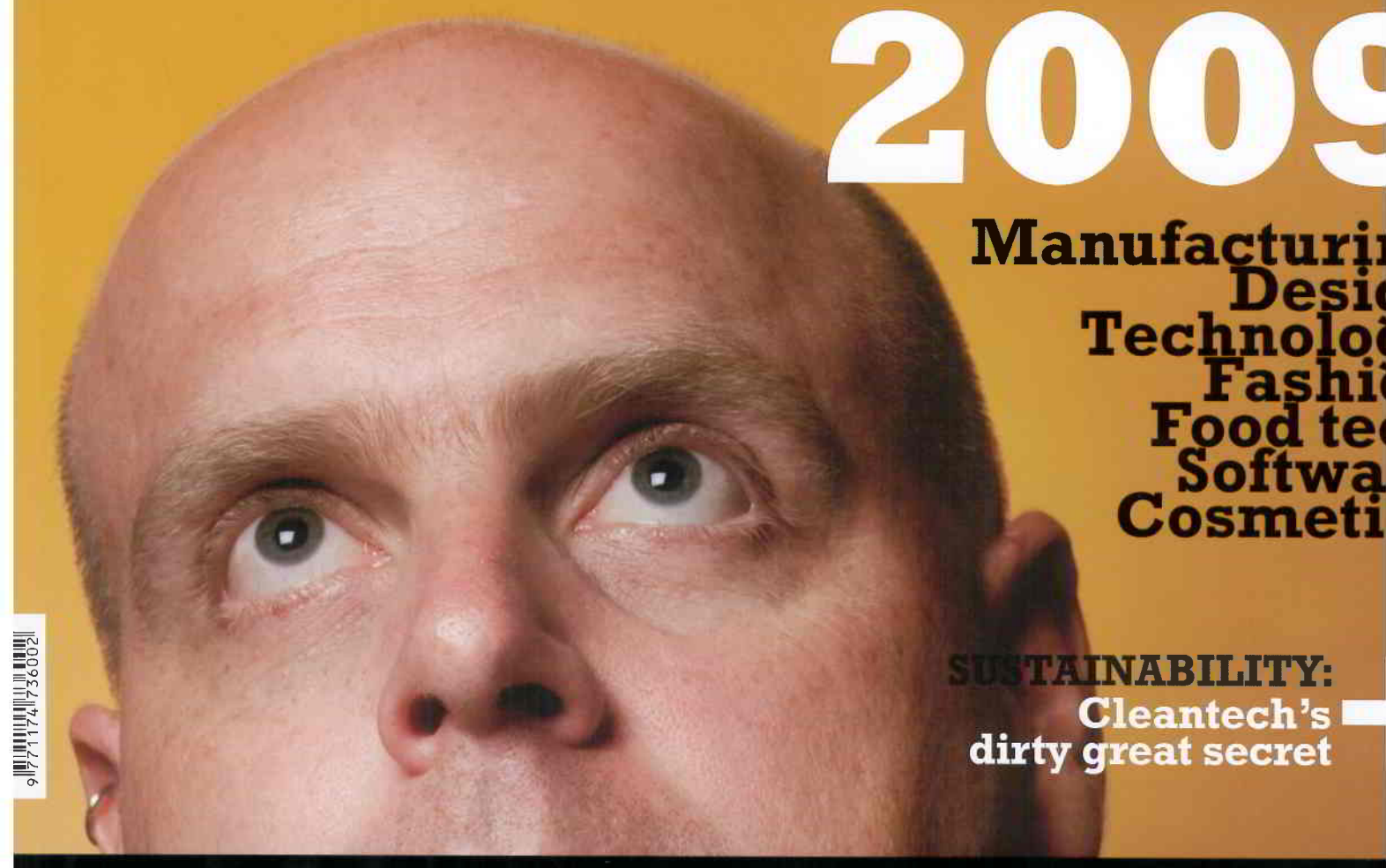
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Tender. promises

SUPERFAST BROADBAND is no luxury – it's a necessity for any self-respecting nation expecting to do business on a global stage. Providers are jostling to bring New Zealand broadband up to speed, by land, sea and air. Meantime the new government might look to our Australian cousins to learn how not to put broadband out to tender.

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Over land

There is one, all-consuming focus in landline broadband: who will get the \$1.5 billion that our new government has allocated toward building a fibre optic network to the home?

The only possible answer is Telecom (for reasons we'll get to shortly), but despite the inevitability, don't expect a quick decision from new IT and Communications Minister Stephen Joyce and Infrastructure Minister Bill English.

Our dynamic duo will be looking to avoid the entertaining chaos that has surrounded the Australian government's similar project. Events there are worth a brief recap, because they could anticipate what is to come here – or what Joyce and English should be looking to avoid – and are instructive of the political jockeying that can result when everybody knows, at heart, that there's only one telco with the resources to build a network.

It took a full year to decide which consortium would be named the 'preferred vendor' to build Australian's National Broadband Network (NBN), following an intensely controversial bun-fight of a tender process. Dominant telco Telstra attempted to bully the government into providing it with guarantees of no organisational separation and a return on its investment of 20% a year, amongst other perks.

**We're being promised faster internet options by land, sea and air – but when will it happen? And who are the most likely contenders to build tomorrow's internet infrastructure?
By Chris Keall**

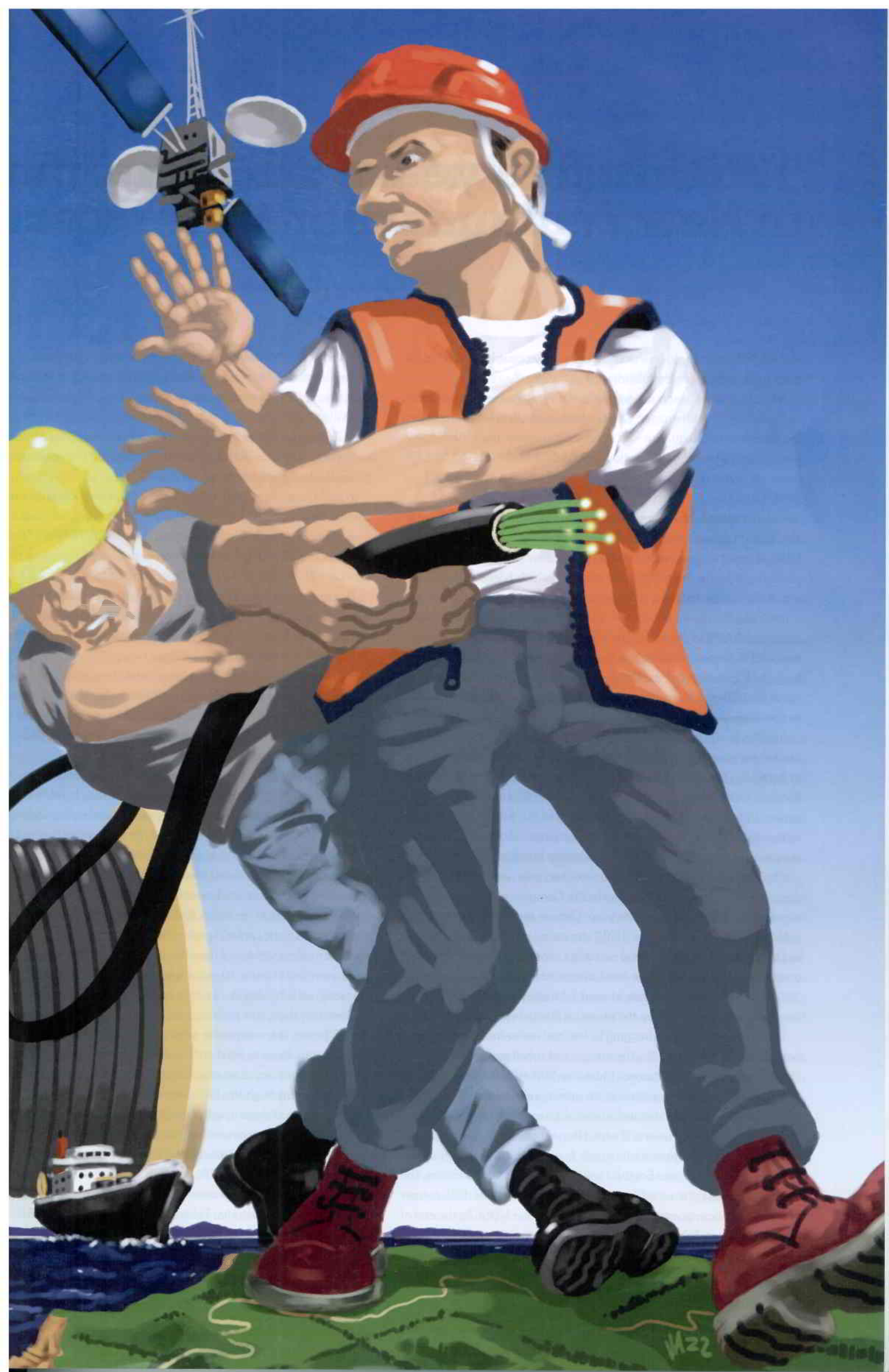
Telstra also asked for a cheap government loan of A\$5 billion to top up the A\$4.6 billion in taxpayer funds Prime Minister Kevin Rudd has promised for the project. In these credit-crunched times, funding is no small issue.

In December last year, Communications Minister Stephen Conroy shocked the industry by throwing out Telstra's tender. The Minister's ostensible reason was that Telstra had failed to fulfil a tender requirement to identify how it would feed ancillary work on the NBN to Australian and New Zealand small and medium companies.

Wider opinion had it that Senator Conroy had simply had enough of Telstra's bolshy attitude. As I write, an expert panel assembled by Senator Conroy has decided (but not published) its preferred bidder for the NBN tender. Regardless of which consortium is named, it will still only be 'preferred'. Speculation remains that, having softened up Telstra (whose share price fell 12% on news Conroy had blocked it from the preliminary tender process), Senator Conroy will bring Telstra back to the bargaining table, assuming it's now ready to play on his terms.

Market researcher IDC says, between appeals and counter appeals, it will be at least another year before any ground is broken on the NBN. That's assuming there's no labour trouble, although the unions have promised plenty.

What can we learn from the Aussie mess? Ministers Joyce and English will surely have noted the extreme aggression of Telstra's behaviour. While the Optus-led consortium (and others) submitted tenders running to more than 1,000 pages, Telstra chairman Mark McGauchie submitted a 13-page letter, briefly outlining a Telstra-version of the project. The media also had a field day with McGauchie's often outrageously abusive comments about competitors' bids. Is this a man Joyce



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“Within five years, the dominant in New Zealand will not be Telecom

and English want to do business with, as they consider any local bid from fully-owned Telstra subsidiary TelstraClear?

Adroitly, TelstraClear is already shifting the debate here. It nominated its regulatory affairs manager, Chris Abbott, to speak to *Unlimited* about the company's strategy here – an interesting choice in itself. Abbott says his company is keeping all its options open, and wouldn't make any major decisions until it had talked to Stephen Joyce, which it expected to have done by the start of March.

A key issue for TelstraClear is whether the government takes an ownership stake in the network, or subsidises it indirectly. But Abbott affects to be blasé about who physically builds New Zealand's national broadband network, claiming the real issue is access – which telcos and ISPs can access the completed network, and at what price.

Ironically, this closely reflects the position taken by Telecom's Australian subsidiary AAPT in relation to the NBN. Telstra in Australia is far larger than AAPT, the reverse of the position between TelstraClear and Telecom here. AAPT was part of the Optus-led Terria consortium before pulling out of the NBN bidding process altogether, when Telecom chose to focus its spending on its new 3G broadband network in New Zealand.

Another lesson is in the cost of laying fibre optic cable. It's generally held that taking fibre to the home in New Zealand will cost around \$5 billion. In Australia, Telstra says it would cost A\$18 billion to extend its existing fibre network to doorsteps. Its current bid for the NBN is for a A\$10 billion project to bring a super-fast service to 75% of the population via fibre-to-the-node. That means taking fibre to cabinets in most neighbourhood streets, but running copper cable from cabinets to homes.

Can Telecom afford to build a fibre-to-the-node network? Here's the thing: it's already doing so. Prodded by the Commerce Commission, Telecom's network infrastructure division, Chorus, is connecting fibre optic cable to 'Whisper Cabinets' in 3,600 streets, so you'll no longer have to live on the doorstep of your local exchange to receive a truly fast internet connection. Each of the fridge-sized, aluminium-clad cabinets can serve 300 customers. In other words, around 1.1 million households will have benefited by next year, when the project is due to be complete.

Those used to Telecom dragging its feet and under-investing in broadband have been staggered by the energy and speed applied to Chorus's little-hailed cabinetisation project. More than 500 of the Whisper Cabinets (so-called because they operate at an urban undisturbing 30 decibels) have been wheeled out so far, well ahead of Telecom's schedule. Telecom already owns national trunks of fibre and the vast majority of the 'backhaul' fibre (which connects phone exchanges to each other).

By the time Joyce and English make their \$1.5 billion decision, the Whisper Cabinet network will be more than halfway finished. DSL copper connection to your door will be boosted to the faster VDSL by the end of this year for most. Telecom will argue it's a no-brainer that the \$1.5 billion should be spent on completing the final stage of its network, and bringing fibre to every door (or at least 80% of them, as the government wants).

There is one alternative, at least in practical terms: power line companies. Dr Paul Winton of Temple, a consultancy that advises large organisations on complex capital investments, has no doubt that a sea change will happen.

“Within five years, the dominant fixed-line internet service provider in New Zealand will not be Telecom, but a power line company.” It's a radical sentiment, but one of which Winton is confident: “The government will go for the lowest-cost option.”

In mid-December 2008, InternetNZ, an industry lobby group representing ISPs, web designers and others in the industry, released a report it had commissioned from independent consultancy Network Strategies. The report claims power line companies do indeed represent the most economical way to roll out faster broadband.

The survey's key finding is that 75% of homes could be provided with a superfast 100Mbit/s broadband connection for \$3 billion if power line companies handled the roll-out. That compares with \$5 billion if Telecom or another telco handles it.

We're not talking here about a broadband connection being delivered over actual power lines, à la erstwhile South Auckland start-up Wired Country, although IBM and others continue to experiment with related technology overseas. Rather, power line companies would take over the job of laying fibre optic cable for voice and data calls.

As Winton explains, power line companies already have gangs of workers skilled at laying cable. Power line companies can lay fibre optic cable in the ground at the same time as they put overhead cables underground, as Vector is currently doing in Auckland, providing fibre connections for business broadband in a ring around the CBD. Or they can drape fibre optic cable around overhead power cables, as TelstraClear already does in parts of Wellington and Lower Hutt.

Many Wellington residents find it an urban eyesore to have thick, snaking fibre optic cables dangling from their power lines. But Winton says the modern version of the cable originally strung around the capital and Lower Hutt almost 10 years ago would be so thin – as little as 5mm diameter, with insulation – as to be barely noticeable.

However, there are problems beyond the aesthetic. For one, there are 27 power line companies around New Zealand by Temple's count. Coordinating them to build and then run a national broadband network would be something of an organisational challenge.

Secondly, although the line companies would have brought fibre to every doorstep, Telecom, with its national network and neighbourhood-by-neighbourhood cabinetisation, would still own and control most of the country's fibre. Political and economic mechanisms would be required to connect data traffic between local networks, controlled by a patchwork of power companies, and Telecom's fibre (or, in some cases, TelstraClear's). In Australia, Telstra has said it will demand A\$80 billion in interconnection compensation if the NBN uses another company to lay local fibre which connects to Telstra's national network.

Third, as TelstraClear's Chris Abbott points out, power companies

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— DR PAUL WINTON, TEMPLE

tend to have totally different investment cycles from telcos. The power companies are built around capital structures that assume big infrastructural projects will make a return over decades; telcos are inculcated in the frenetic IT industry upgrade cycles.

TelstraClear is already working with power line companies on a regional basis, however. In Northland and Tasman, the power line company is laying the fibre, while TelstraClear is “providing the connection smarts”, as Abbot puts it.

Under sea

Currently, all of New Zealand’s internet traffic to the outside world (bar a sprinkling of satellite activity) flows through the Southern Cross Cable, majority-owned by Telecom, which runs in a figure eight between Seattle, Hawaii, Auckland and Sydney. Outgoing Information Technology Minister David Cunliffe estimated high international data charges resulting from this monopoly added around 10% to the monthly broadband bill of every New Zealand business and household.

Cunliffe leaned on state-owned broadcasting and broadband infrastructure company Kordia to investigate alternatives. It commissioned research from Covec that claims a second cable could save New Zealanders up to \$1 billion in international data charges over 10 years, with exporters in service and high-tech industries benefiting in particular.

Kordia duly hooked up with Australia’s Pipe Networks, slated to be its joint venture partner in its trans-Tasman cable venture. Pipe Networks is already laying sub-marine fibre optic cable from Sydney to Guam to the US, a project which will be completed around the middle of the year.

Pipe Networks’ plans include a 150km branch of fibre from Sydney, which is designed to accommodate a new leg of cable to be laid to Auckland. But lenders ANZ and Westpac pulled out in early December last year, citing the credit crunch. Just before Christmas, Pipe Networks stitched together a deal involving vendor financing from Tyco (the company that will make the fibre) and an unnamed anchor customer. Pipe Networks will now begin building the Trans-Pacific leg of its new cable up to Guam.

Pipe Networks now seems sorted. Under the company’s alliance, it is responsible for the leg to the US, while Kordia must find 100% of the estimated \$200 million required to build the trans-Tasman leg. Kordia CEO Geoff Hunt says that after borrowing to buy Orcon for \$24 million and after other outlays over the past two years, the SOE is already more than 50% geared, so is not in a position to hit up banks, credit crunch or no.

Instead, Hunt will seek funding from anchor customers or the government, and says he’s open to some of the government’s \$1.5 billion broadband infrastructure going toward the second trans-Tasman cable. He sees the submarine cable as one of three critical broadband problems, the other two being regional broadband infrastructure (which he’s also

keen for Kordia to address, again possibly using some of the \$1.5 billion) and the third the well-canvassed fibre-to-the-home issue. If Hunt succeeds and Pipe Networks starts to lay the trans-Tasman cable this year, Kordia expects it to be ready for testing in 2011.

Through air

Analyst Paul Winton says wireless internet options will forever be relegated to a secondary role, helping to fill gaps in landline networks. He says there are some interesting ‘near-range’ technologies, such as gigabit wireless and ultrawideband. But he doesn’t see WiMax – the best-known wireless network technology – as ever stepping up to become a full-blooded alternative to fibre optic cable.

Although WiMax, a pumped-up version of wi-fi, can throw a wireless broadband signal up to 10km, “there are simply mathematical limits to the amount of data it can transmit”, says Winton. Only fibre can cope with a world of on-demand TV delivered via the internet, videoconferencing and other multimedia-intensive applications in the years ahead.

Some industry wonks may disagree with Winton. In the US, A-list telco Sprint has started a major WiMax build, and Google and others are lining up to bid for the large chunks of spectrum freed up in February by the US networks’ move to digital-only broadcasts. The date for New Zealand’s analogue TV switch off, which will also free up large chunks of spectrum for wireless internet, will be decided in 2011.

Regardless, the debate is academic here. Kordia once harboured major WiMax ambitions, envisioning a wireless network that could challenge Telecom’s landline monopoly. But Hunt says Kordia’s high debt means it will prioritise regional infrastructure projects and its trans-Tasman cable project. Any WiMax investment is off the table for the foreseeable future.

CallPlus and rival Woosh have also nursed plans for national WiMax networks. But CallPlus’s WiMax network has been stalled since inception in Whangerei, and Woosh has been looking for months for an investor with \$150 million to expand its own WiMax network, currently restricted to Hamilton.

With WiMax stalled, attention turns to Telecom’s new 3G network launching in June. Its HSPA+ technology will support wireless cellular broadband connections at speeds faster than almost anybody’s landline today. However, there are a couple of catches. One, to date there are no cellphones around that support HSPA+ (the reason Vodafone gives for not supporting the technology yet). Two, cellular data is charged at nosebleed rates even today, and Telecom and Vodafone will want to recoup more cash after they finish upgrading their respective 3G networks mid-year.

More and more people will access the internet through an iPhone, a Google Android device or another smartphone, but don’t look for cellular network upgrades to challenge landlines any time in the next half decade. Whoever Joyce and English end up giving their money to, fibre will rule.