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Bothering About Broadband

Review Essay

Ergas, Henry, *Wrong Number: Resolving Australia's Telecommunications Impasse*, Allen and Unwin, Sydney, 2008, ISBN 978 1 74175 648 7, xi + 242 pp., A$45.00.

Fletcher, Paul, *Wired Brown Land? Telstra's Battle for Broadband*, UNSW Press, Sydney, 2009, ISBN 978 1 74223 003 0, vi + 264 pp., A$34.95.

Fotheringham, Vern and Sharma, Chetan, *Wireless Broadband: Conflict and Convergence*, IEEE Press, Piscataway, NJ and John Wiley & Sons, Hoboken, NJ, 2008, ISBN 978 0470 22762 6, xxiii + 253 pp., A$150.00.

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On the night of 30 June 1997, a ball was held at a Sydney hotel to mark the introduction of open competition into Australian telecommunications. The *Telecommunications Act 1997* commenced the next day, allowing virtually anyone to get a licence to build and operate a telecommunications network.

For most of the night, proceedings were dominated by the word 'Regulation', written across a large wall erected on the stage. At midnight, the wall came down with as much thunder as its Styrofoam composition permitted, leaving a new message, 'Competition', to welcome the morning.

The telecommunications business was open for all. Gone was the long era of state-owned monopoly where telecommunications networks were designed by engineers for engineers, capital investment programs and retail prices were fixed by governments, and users were used. Gone even was the brief era of fixed line duopoly and mobile triopoly since 1991, when Optus and Vodafone were the only companies besides the incumbent Telstra that could build networks.

A little under twelve years later, many of the competitors that entered the openly competitive telecoms business were just as enthusiastic about the federal government's

April 2009 announcement of a big plan for a public private partnership to build and operate an open access fibre national broadband network. This would be a new kind of monopoly fixed line network. The state would be in charge. It would not be Just Another Network, vulnerable to the creative destruction of a competitive market, but a Network for the Ages. Perhaps there would be another ball, and the Styrofoam could be put back together again.

Transformations on this scale take some explaining. Australians are fortunate that two people who have been in the thick of telecommunications policy for a long time have taken the trouble to attempt it. Henry Ergas and Paul Fletcher are consultants specializing in telecommunications and other network industries. Both agree something is deeply wrong with the state of telecommunications in Australia and both have been close to the long-serving (1996-2003) communications minister, Richard Alston, who presided over much of the recent era. Ergas wrote reports on telecommunications for the OECD in the late 1970s and for the Labor Government in the mid-1980s, and taught Alston telecommunications economics at Monash University as part of an MBA. Fletcher, whose book Alston launched in Melbourne, was a senior adviser to him and eventually Chief of Staff.

That is where the connections end. You need to read both *Wrong Number* and *Wired Brown Land?* to start to understand what has been happening in Australian telecommunications. The characters are the same but they look and speak so differently. In Fletcher's book, Telstra is a dark force defending old ways, its rivals noble but eternally thwarted, and the regulator, the Australian Competition and Consumer Commission (ACCC), generally heroic. In Ergas's, the regulator is the darkness and Telstra a misunderstood titan. Its rivals are regulatory rent-seekers touting for a free lunch.

Ergas, whose 'work would not have been undertaken without my close and continuing involvement with Telstra, to which I have provided consultancy services over many years' (Ergas, 2009: viii), makes a couple of appearances in Fletcher's book, first accompanying Telstra boss Sol Trujillo and other 'polished and prosperous telecommunications executives' to present Telstra's own broadband plan to Prime Minister John Howard in 2005. Later he is part of a small group negotiating the detail of a possible deal with Minister Helen Coonan. Fletcher, the Director Regulatory and Corporate Affairs at Telstra's rival Optus for eight years after leaving Alston's office, does not appear in Ergas's book.

For Fletcher, what is wrong with the state of Australian telecommunications is that Telstra 'is far too big and dominant'. It is vertically integrated through network, wholesale and retail activities, controlling most of the country's fixed line customer access and back-haul networks. These include the copper telephone lines to around 11 million houses and businesses and a coaxial cable TV and broadband network passing 2.5 million homes. It is horizontally integrated across fixed and mobile telephony, internet access (BigPond), pay TV (50% of Foxtel) and directories (Sensis). This produces a

'horribly lop-sided industry structure in fixed line telecommunications'. Regulatory arrangements are 'too weak to control Telstra' (Fletcher, 2009: 227).

Slow broadband take-up in Australia in the early 2000s, according to Fletcher, is a result of this structure. In June 2002, there were just 1.3 broadband subscribers per 100 inhabitants, about a third of the OECD average and well behind market leaders Korea (20.3) and Canada (10.3). The reason? 'Telstra kept prices sky high. Once they fell, take up rocketed' (227). This happened in February 2004, just as Optus was about to launch a resale digital subscriber line (DSL) broadband service after months of negotiation with Telstra over access to its copper lines, an 'act of bastardry' Fletcher is perfectly placed to recite ((Fletcher, 2009: 79-82). But the sense of crisis about Australia's broadband performance was then deliberately created by Telstra 'to manufacture a case for regulatory changes to suit its private commercial interests' (Fletcher, 2009: 228). In December 2005, Australia crept ahead of the OECD average (13.6 to 13.4). It is still there three years later, (25.4 to 22.6), 16th out of 30 OECD countries, but well behind the leaders (OECD Broadband Portal, 2009).

Ergas sees it completely differently. The problem is not Telstra but the legislation empowering the competition regulator to force it to allow competitors to use its networks. This 'access regime' is not the same one that applies to other infrastructure industries like electricity, gas and railways where similar problems arise for entrants wanting to offer competing services without wholly replicating incumbents' physical facilities. The regulator has too much discretion in telecommunications and has exercised it capriciously, trying 'to centrally plan (or "socially engineer") the development of the Australian telecommunications market, tweaking first this price then that with the aim of channeling competition in one direction or another' (Ergas, 2008: 28). By regulating too much of Telstra's network and setting third party access prices too low, the ACCC has 'severely distorted' price signals and discouraged investment by Telstra and its competitors alike (Ergas, 2008: 3).

A 'new wave of telecommunications investment [is] now required,' says Ergas, 'to complete the task begun in 1986 by restructuring and renewing the customer access network' (Ergas, 2008: 192). Telstra, however, has been reluctant to undertake it, because it fears the regulation that will be imposed. Its rivals 'clearly prefer to "cheap ride" on Telstra's network rather than upgrade, much less further deploy, networks of their own'. Ergas is especially critical of Optus, which he thinks underutilizes its own cable network, offering service to only 60% of the 2.2 million homes it passes, and failing to upgrade the network so that its data-transmission capabilities 'are now well behind the standards implemented by comparably sized networks overseas' (Ergas, 2008: 20-1).

Disagreeing so abjectly about the diagnosis, Fletcher and Ergas inevitably propose totally different remedies. Fletcher wants to carve Telstra up. Ergas wants to set it free. The key to the 'broadband promised land', Fletcher argues, is tackling the problem of Telstra and correcting the structure of the telecommunications market. He favours 'structural separation', a new national fixed line network owned and operated by a company selling wholesale services, separate from the companies that sell retail services. The network

operator could be one of the non-Telstra players that expressed interest in building a new national broadband network, or a new entity created by breaking up Telstra into discrete retail and network businesses with separate shareholders. The retail business would compete with other providers; the network business would be a monopoly, heavily-regulated to ensure it didn't exploit its market power (Fletcher, 2009: 209-33).

Ergas also thinks 'a radically new approach is needed', but he wants:

> one which is more modest about what regulation can achieve, provides investors with a more certain and consistent environment, and then allows market forces to do the heavy lifting. This is not to claim that market forces are perfect, for they never are; however, bad regulation is even more costly, because it is often less obvious and almost never self-correcting. Nor is it to say that there is no role for regulation or for government intervention, but rather that such a role needs to be better targeted and rendered more accountable (Ergas, 2008: 28).

He proposes changes to bring the telecommunications access regime more into line with those applying in other infrastructure industries. Telecommunications has special characteristics, but the 'salient differences [especially technological dynamism] reinforce, rather than weaken, the case for a regime that is limited in its scope and constrained in its operation'. Structural separation of Telstra, Ergas argues, 'would likely impose very substantial costs', particularly by increasing inefficiencies in planning, building and migrating customers to new networks' (Ergas, 2008: 164-70).

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'Impasse' is not just where the reader gets to. It is where the government ended up as well. As Fletcher's book was being released in April, the Prime Minister, the Treasurer and the Minister for Finance and Deregulation joined the Minister for Broadband outside Parliament House in Canberra to announce a new plan for a National Broadband Network (NBN). According to finance and deregulation minister, Lindsay Tanner, 'we felt that there's been so much delay, so much obfuscation, so much money wasted on rubbish programs trying to make people think the government was doing something about it—I'm referring to the previous government of course—and there is so much structural inefficiency in the industry…' (Kohler et al, 2009).

Costing $43 billion, the new plan will deliver download speeds of 100 Mbits/sec to 90% of Australian homes and workplaces within eight years. It will wholly replicate the copper lines that connect Australia's roughly 5000 exchanges to its 11 million households and business premises with optical fibre—'fibre-to-the-premises' (FTTP) or —'fibre-to-the-home' (FTTH). It will be built and operated by a company in which the Commonwealth will be the majority shareholder, and run as an open access, wholesale business (Conroy, 2009c).

This plan replaces the NBN Mark 1 that Labor took to the 2007 election, promising download speeds of 12 Mbits/sec to 98% of Australian homes and workplaces via 'fibre-

to-the-node (FTTN). This would have replaced much of the copper with fibre extending to street-corner 'nodes', but left the copper in place between those nodes and customers' premises. Interpreting FTTN as only an interim solution, FTTP becomes a leap-frog straight to what Lindsay Tanner called 'the end game' (Tanner, 2009) and telecoms industry analyst Paul Budde 'the final destination' (Budde, 2009). A government that came to office on a promise to build infrastructure for the future has decided to spend much more money to get to an even more distant future faster.

Announcing this future, Kevin Rudd talked a lot about history. He called it 'the most ambitious, far reaching and long term nation building infrastructure project ever undertaken by an Australian government … Like the building of the Snowy Hydro, like the building of the Sydney Harbour Bridge, this is an historic act of nation building.' There was something Australian about all-fibre, rolling up the sleeves and completing the job where FTTN would have pulled up short. 'Going beyond fibre optic to the node to fibre optic to the premises is the right way to go. It puts us in the slot when it comes to being competitive with the world economy, the 21st century' (Rudd and Swan, 2009).

A mixed reception was captured in front page headlines the next day that acknowledged both the ambition and the risk—*The Australian's* 'Rudd's $43 billion fast web gamble' and *The Australian Financial Review's* 'Rudd bets $43 billion on broadband'. Those who liked the ambition included former Optus, Telstra and Kodak Australia boss Ziggy Switkowski. He called it 'strategically elegant and appealingly breathtaking in its ambition', 'a game-changing intervention that may help unify a typically Balkinised set of diverse networks of subcritical scale'. It created 'no industry winner or loser and so should not distort the functioning of a competitive market in telecommunications' (Switkowski, 2009). Paul Budde called it 'the most ambitious FTTH network anywhere in the world' (Budde, 2009).

Stilgherrian, writing for *Crikey*, 'didn't catch the rest' after he heard the PM say the government was going to build and operate a fibre-to-the-home network. 'Kevin Rudd was drowned out by the sound of 10,000 pairs of jeans being creamed at the thought of such massive internet bandwidth. The kind of bandwidth which ... well, which they already have at street-corner news stands in Seoul' (Stilgherrian, 2009). Also in *Crikey*, Mark Pesce thought it was not fast enough, demonstrating 'a certain short-sightedness and a lack of vision. Instead of inspiring Australia and the world with a truly world-class next-generation broadband network, the Government promises to dish up only what our trading partners have already got' (Pesce, 2009).

With praise for the ambition came compliments for the ambitious. 'Only government has the resources to undertake the rebalancing of a strategic industry to create a more open market and probably only a Labor government would have the ideological conviction to go down this path,' said Switkowski, overlooking the New Zealand National Government's plan to get fibre to 75% of premises within 10 years (NZ Government, 2009). 'The Australian Government is one of the few governments who, in a holistic way, understand the importance of broadband across the various sectors,' wrote Paul Budde.

Supporters also praised the technical vision. Switkowski thought a 'standardized fibre-optic platform' and complementary wireless was 'the global communications mix of the future … not a risky exercise in picking winners'. Rod Tucker, Laureate Professor at the University of Melbourne, Research Director of the Australian Research Council Special Research Centre for Ultra-Broadband Information Networks (CUBIN) and a member of the government's expert panel that considered the bids for NBN Mark 1, said one of the compelling advantages of an FTTP network was that 'the core infrastructure, which constitutes the bulk of the investment—the fibre in the ground or strung from poles—is completely future-proof and will not require any additional upgrades' (Tucker, 2009).

Amid support for the vision was recognition that the very big plan was a way out of a very big problem. The policy Labor took to the 2007 election was essentially a plan to upgrade Telstra's network to FTTN. When a failure to comply with one of the tender criteria resulted in Telstra's exclusion from the NBN Mark 1 bidding process in December 2008, the government was left in a major jam. Upgrading Telstra's network without Telstra's participation would require some form of compulsory acquisition of its assets. The legislation authorizing that would have to get through a hostile Senate. Even if the acquisition itself then survived the inevitable legal challenge, the government would have to write a huge cheque.

Replicating the whole copper network with fibre was a political and industrial game-changer as well as a technical leap-frog, a way of doing the job of superfast broadband without Telstra. Alan Kohler had suggested it a year earlier, though describing the idea at the time as 'a piss into the wind' (Kohler, 2008). It took that year for the government to realize the scale of its policy problem and the paucity of other options, for 12 Mbits/sec to look sluggish, for Telstra to get the government livid enough and for the global financial crisis to legitimize levels of government spending and debt that were unmentionable amid the 'fiscal conservatism' of the 2007 election. As BBY telecoms analyst Mark McDonnell put it: 'Telstra now faces an irrational investor driven by a political agenda and unconstrained by debt' (The Economist, 2009).

Just as the policy blended pragmatism with vision, support for it had a big element of commercial opportunism for many in the telecoms and media industries. Abandoning FTTN removed the risk of DSL infrastructure in Telstra's exchanges being stranded in the short-term. That meant the nearly two dozen internet service providers that have installed equipment allowing them to offer ADSL (Asymmetric Digital Subscriber Line) or ADSL 2+ services could keep doing so for a good while yet. In the meantime, the government would build a parallel, higher quality, fibre access network, and be under pressure to set access prices low enough to encourage ISPs to shift their business onto it. The government also invited them to sell any fibre assets of their own into the new enterprise in exchange for equity, but they wouldn't have to do that to be able to use the new network. For media companies, especially broadcasters and newspapers publishers, the government was offering to build a new distribution network that would take their content to customers faster. The ABC, in particular, was quick to praise the new plan as 'a great opportunity for the ABC, to deliver free of charge, a wide range of high quality distinctive Australian programming, to all Australians' (ABC, 2009).

But alongside the ambition came the risk. Where would the money come from, would the technology be a winner well into the future and who would ensure this new company doesn't become another Telstra? 'Not the modern, anti-competitive Telstra, but the old, publicly-owned Telstra for which customers were a distant second in priority and engineers and bureaucrats made the key decisions about what was needed and what wasn't needed.' *Crikey's* opening email, just a few hours after the announcement, summarized it all. 'This is a huge gamble with more than a Whitlamite whiff of big government about it. If it goes wrong, it is unlikely anyone in the current Government will still be around to take the blame' (Crikey Daily Mail, 2009).

Where the money would come from was a particular target. Stephen Bartholomeusz and others cited analysts who concluded the national broadband network numbers 'didn't stack up' (Bartholomeusz, 2009a). The Opposition made this line central to its attack on the budget a month later:

> His Budget Papers boast for page after page of his national broadband network – $43 billion he says. But the massive borrowings it will demand are not taken into account. And who is to say it will be $43 billion? This Prime Minister went on to television to say it would be commercially viable and called on mums and dads to invest. He did so without any business plan, any financial analysis – any responsible or reasonable basis to support what he was saying. And so what price the Prime Minister's broadband dream? Nobody knows – least of all the Prime Minister. But we do know this – we will all pay for it and it will build that Labor mountain of debt (Turnbull, 2009).

One of the reasons the government ditched NBN Mark 1 was because it was worried the private companies left in the bidding process after Telstra's expulsion wouldn't be able to raise their share of the money. But although they couldn't raise roughly $10 billion towards the cost of a $15 billion FTTN network, they were now going to have to find more than $20 billion for their share of the $43 billion FTTP network.

The Government sent conflicting signals about its financial expectations. On the one hand, Rudd said 'Right now, under market conditions, it's not possible to deliver this through pure market mechanisms'. That's why the Government was stepping up to take a majority share in the new enterprise. On the other hand, he thought 'the Australian public, I believe, would have a bit of an interest in investing in Aussie infrastructure bonds, because this is a very good proposal. It's solid infrastructure for the future.' Treasurer Swan concurred: 'We are establishing a commercial entity. We are putting it together on commercial terms. And it should give a return over time to the Australian people. So there couldn't be a better investment.' But he later confirmed the 'Aussie infrastructure bonds' would be government guaranteed, which means those who buy them will not share the project risk (Rudd and Swan, 2009).

Crikey asked 'Why not be more honest and admit that taxpayers will be coughing up most of the money?' Its Canberra correspondent Bernard Keane was prepared to 'bet

good money the level of private participation is well below 49%, and that when it's sold off, the network value will be treated as a sunk cost and there'll be no return for taxpayers' money beyond the [net present value] of access charges for retailers' (Keane, 2009). Another former Alston adviser, David Kennedy, now a Research Director for Ovum, thought the overall idea might make sense but not the timing:

> I firmly believe high-speed broadband will be transformative of the economy and society – in the long run. And there will be a role for government in taking high-speed broadband national, but only after the regulatory and business models for networked service delivery and integrated information systems have been worked out. The precedents here are our national road, rail and copper telephony networks. There was commercial demand … in some places but it took a while to create a genuinely integrated national market. At that point the government intervened to take these infrastructures national. We have not reached that point with FTTH, and I think it's more than eight years away (2009).

Stephen Bartholomeusz worried about whether broadband was more worthy than less exciting water, transport or energy infrastructure projects, warning of harder choices ahead for a government now living with debt instead of surpluses (2009b). Malcolm Colless thought 'Ruddnet', offering much higher speeds to 90% of the population than to the other 10%, would 'divide the population into haves and have-nots', though Bartholomeusz argued 'It simply isn't economic to provide equivalent 21st century telecommunications services to the bush – which isn't surprising, given that it wasn't economic to supply 20th century services either' (2009c).

The unaskable question was asked by Paul Kerin from Melbourne Business School: if the government had enough money to set up a brand new telecommunications enterprise, might it be better off buying back the old one? Like the Government, he was sick of Telstra stalling further investment. 'But this roadblock should not dictate the waste of billions of taxpayer dollars on a fundamentally wrong technology choice. Governments' track-records in "picking winners" is atrocious.' Instead, the Government should buy Telstra, break it up and sell the pieces. This would establish several wholesale-only broadband-capable networks, including copper/ADSL, hybrid fibre-coaxial cable and Next-G wireless. These would compete among themselves and with others like Optus's cable network, eliminating Telstra's conflicts of interest and creating more competition more quickly than an FTTP network. He thought the price would be about $70-$75 billion, given the current share price and likely takeover premium. It would happen faster, be much cheaper and create more wholesale competitors than FTTP. Most of the money would be recouped as the wholesale-only and retail-only parts were sold off (Kerin, 2009).

The authors of *Wired Brown Land?* and *Wrong Number* fell neatly enough into the two camps, ambition and risk, over NBN Mark 2. Fletcher wanted ambitious structural change and got it. 'Telstra's much vaunted regulatory strategy of taking on the government lies in smoking ruins,' he said (2009b), although, like a boxer bashed too many times by a old opponent, he sensed there might still be another Telstra fist coming

from somewhere surprising, such as a major role in the government's public private partnership (2009a).

Ergas was appalled. He thought it 'a stunt', 'a decision taken in haste and then announced as a fait accompli. Were the choice indeed between this costly, risky and poorly documented scheme and doing nothing, then it would be wiser to do nothing' (2009). Wanting a more modest role for government, he got a new world benchmark for broadband subsidy, measured either as a proportion of industry revenue or GDP. His Concept Economics ran some numbers for an industry newsletter, concluding that retail customers would have to pay $215 a month for a 100 Mbits/sec service if the $43 billion investment was to 'return its costs and pay standard capital returns' (15% weighted average cost of capital) (Lynch, 2009). When ACCC chairman Graeme Samuel declared 'The NBN will spark a new wave of infrastructure investment, technological change and product innovation' (Samuel, 2009), Ergas and colleague Eric Ralph accused him of taking 'what seem like very strong and partisan positions, with little empirical support'. This was 'especially remarkable given the ACCC's status as an independent statutory authority'. He mused cheesily that perhaps the problem was 'indeed that of an entrenched monopoly'—the ACCC's over competition matters. 'Could it be time for some competitive alternatives?' (Ergas and Ralph, 2009).

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Since the announcement, Minister Conroy has been busy evangelizing about superfast broadband. Digital technologies will 'transform health care and education … underpin our future carbon-constrained economy … secure our infrastructure investments'. Those suggesting FTTP is only for faster movie downloads are 'the equivalent of someone in the 19th century saying that the widespread introduction of electricity is just about having a better light to read in bed at night' (Conroy, 2009b). He is getting the promised first steps underway—shovels in Tasmania, seeking views on the best ways to spend the $250 million for regional backhaul and install FTTP in all new housing estates, and inviting submissions on wider regulatory reforms (Conroy, 2009a). These may include tougher vertical separation of Telstra's existing activities. The $43 billion cost is now 'the outer limit of the estimate and it's got a pretty sizeable chunk of contingency built into it' (Kohler et al, 2009), and the Government's contribution will only be around $11 billion. This assumes 50/50 debt/equity for the whole project, and half the equity held by government. The $11 billion will come from the $4.7 billion committed under NBN Mark 1 plus $6.3 billion in 'Aussie Infrastructure Bonds' (Coleman, 2009).

Telstra's immediate response was to 'look forward to constructive discussions with the Government at the earliest opportunity' (Telstra, 2009). A month later it got a new CEO and chairman. Reports appeared that a new, softer Telstra was open to break-up (Sainsbury and Hewett, 2009) and was considering the sale of some assets into the government's public private partnership (Oakes, 2009). But outgoing CEO Sol Trujillo said the upgrade of its cable network in Melbourne would still proceed (Trujillo, 2009). The OECD released new data showing Australia's broadband is still expensive (OECD Broadband Portal, 2009) and a report giving cautious support for government spending

on broadband infrastructure as a form of economic stimulus offering both short-term demand-side and long-term supply-side benefits (Reynolds, 2009). FTTP supporters like Paul Budde emphasized the 'trans-sectoral' nature of the project, meaning the value of the new network could not be measured simply by multiplying the expected number of customers by the monthly fees they would pay (Budde, 2009). State Governments lobbied to host the NBN's headquarters (AAP, 2009).

While the politicians and industry lobbyists got on with their deals, Australia's broadband users got on with broadband. The day before the government's announcement, the Australian Bureau of Statistics released data showing a fifth of all broadband subscribers at the end of 2008 were mobile subscribers. The number had grown by a million over the previous year. This was a much bigger increase than the additional 400,000 DSL subscribers, although there are still many more DSL broadband subscribers than mobile wireless. But these figures do not treat as broadband subscribers those people that use 'smart' mobile phones like iPhones and Blackberry's to access the internet, so they understate the significance already achieved by the mobile internet (ABS, 2009). Stephen Bartholomeusz argued 'The shift to wireless and wireless broadband has been so abrupt and dramatic, and wireless technologies are developing at such a pace, that the eventual scale of demand for fixed-line broadband is quite uncertain' (2009c).

This is the ground Fotheringham and Sharma set out to tackle in *Wireless Broadband*. Fotheringham is a 'serial entrepreneur' of the broadband wireless industry, Sharma is founder and president of a Washington State-based mobile and voice consulting firm. The book is a useful compendium of information about the telecoms business, mainly in the United States, written from the perspective of market entrants. It turns out to be as much about broadband generally as it is about mobile, but the convergence of fixed and mobile communications, and the blurring of boundaries between all forms of delivery, is one of its constant themes. The biggest claim about mobile's place is made by Strategic News Service CEO Mark Anderson in the Foreword: 'we seem, as a planet, to be on the verge of a mammoth deployment of bandwidth, and my guess is that the great preponderance of those cycles will be delivered wirelessly' (Fotheringham and Sharma, 2009: xiii).

These industry-insider-authors offer some interesting asides. They are worried that the United States is 'slipping steadily farther behind our international brethren with the implementation of advanced wireless systems' (Fotheringham and Sharma, 2009: 205). Investors have been seduced by soft options: 'migration from long-term patient investment in core technologies to shorter-term, higher-return investments will lead the US venture capital industry to squander its attention and capital in the current bubble market for Web 2.0 Social Networking ventures'. American talent will depart to expand the 'continuing international diaspora of wireless broadband talent and opportunities' (Fotheringham and Sharma, 2009: 25). The industry is 'failing to leverage increased device power to expand the utility and ease-of-use functionality that leads to true sustainability in the mass market. This insidious march of progress plays havoc with just about everyone in the industry' (Fotheringham and Sharma, 2009: 206).

There's a lot of information here about what is happening, has happened recently and is likely to happen in the near future. This includes drivers of mobile useage, device enhancements and technical developments. Mobile useage is being driven by video, music and other audio, location-based services, messaging, social networking and user-generated content, advertising, voice, gaming, sensor networks. Devices are being improved by increasing storage capacity and better image/audio/video management. Developing technologies include compression technologies that reduce bandwidth requirements and the competing standards for mobile video. But the book lacks the kind of synthesis that will prevent it dating quickly. Locked into the relentlessness of change, it could do more to sort the big changes from the little ones, the ones that are taking decades from the ones we'll have forgotten about tomorrow and the ones, like convergence, that never end.

If there is a big theme, it is the clash between the internet and telco models of mobile communications, to some extent paralleled by the clash between WiMAX and Long Term Evolution (LTE) as 4G technology pathways: 'As we move toward the inevitability of open wireless broadband network availability, the marketing crossroads will be where the internet culture of open access and open systems collide with the traditional telephone system-inspired closed architecture of the cellular operators.' The authors do not predict the demise of either, only that 'there will be a wide range of new business models trialled …' (Fotheringham and Sharma, 2009: 26). But it is clear they see the continuing dominance of the 'cellcos' in the United States as a major problem.

Wireless Broadband is not strong on policy solutions, too often lapsing into clichés—'We will all enjoy the benefits of the broadband future, yet there is much work yet to be done' (Fotheringham and Sharma, 2009: 215) … 'How we as a society leverage this remarkable and fundamental shift of capabilities is a non-trivial challenge that will reach into every community, industry, organization and family.' (Fotheringham and Sharma, 2009: 89)—but it wants something done about the state of telecoms competition in the United States. A quarter century after the Bell break-up, fragmentation has been reversed by consolidation. Verizon and AT&T are now the biggest fixed line and cell operators, and won most of the spectrum in the 700MHz auctions. Many big broadcasters vacated analogue TV spectrum, only to see it acquired at auction by two giant telco/cellcos. The legislators and regulators that allowed all this, argue Fotheringham and Sharma, 'will be proven to be shortsighted at best, and their failure will likely be considered as a dereliction of duty by future generations'. Verizon and AT&T now have the power to 'literally crush virtually any of the existing or putative players that encroach on their newly created and largely unfettered hegemony in the converged telecommunications services market' (Fotheringham and Sharma, 2009: 200).

This is where *Wireless Broadband* may speak to the Australian broadband debate. The authors are convinced that:

> the only telecommunications service providers with any substantial chance of developing into true competitors to the [fixed line incumbents] will be those that have access to their own autonomous infrastructure or those that can operate fully

open, shared public networks solely on a wholesale basis, open to all comers on equal terms, as has been successfully implemented in the UK with the structural separation of BT (Fotheringham and Sharma, 2009: 14).

Curiously, Australia is bracketed with the UK and NZ as a country where 'a full separation of the legacy telephone company monopol[y] into separate, arm's length entities has succeeded extremely well in bringing substantive competition for telecom services into reality' (Fotheringham and Sharma, 2009: 99). In the Foreword, Anderson contrasts Kevin Rudd's election on a big broadband promise with the (alleged) failure of either candidate to mention bandwidth in the US presidential campaign: 'Yes my bet is on Australia in that race', he concludes (Fotheringham and Sharma, 2009: xiii). Plainly, what is happening in broadband is a product of the stories that are told and who tells them.

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Early in *Wired Brown Land?* Paul Fletcher describes Telstra CEO Sol Trujillo bringing a 60-page pack of PowerPoint slides to Canberra to explain his broadband plan to the Prime Minister. The company, he says, 'has arguably the most PowerPoint-dependent corporate culture in Australia' (Fletcher, 2009: 9). Of the three books reviewed, only Fletcher's strives to escape the PowerPoint shape and style of telecoms consulting and policy presentations. *Wrong Number* is full of the kind of dot-pointed lists that have become a conference lingua franca—four specific qualifications, six circumstances, three problems, three core problems, two sources, six changes, three issues. *Wireless Broadband* is dense with interesting material organised into sections and sub-sections that could be cut-and-pasted and presented to serve other purposes, though at $150 RRP, you'll need a sponsor.

Fletcher has written a book, with a narrative and some characters, to try to engage readers beyond the telecoms conference circuit. It starts in 2005, circles back through the pre-history and up to the moment in early 2009, just after Telstra's NBN Mark 1 bid was declared ineligible. His personal involvement in much of the story brings absorbing detail, though it also lumbers it with rationalizations. A former Liberal ministerial staffer, Fletcher is highly critical of the Labor Government's 'fundamental policy error' (Fletcher, 2009: 32) to merge Telecom Australia and OTC to form the too-powerful Telstra in the early 1990s, but then wants to blame Labor again for not letting the Liberals sell this 'monster' (Fletcher, 2009: 26) quickly after Howard's election in 1996. The deregulatory enthusiasm for sweeping away every kind of consumer protection regulation that might irritate a telco except the One Big Regulation to structurally dismember its major rival would indeed amount to a 'Grand Settlement' (Fletcher, 2009: 226)—for Optus.

Wired Brown Land? and *Wrong Number* are ostensibly about the same topic and were published within a few months of each other. What is odd is how little they have to say to each other. Don't expect to find in Ergas's book an answer to Fletcher's examples of Telstra's conduct in the market-place, even though they circulate widely around the

industry. The story mentioned earlier about its big broadband price cuts in 2004 just as Optus was preparing to launch a DSL resale product is a perfect demonstration of the information asymmetry problem that arises where Telstra's retail competitors need access to its unique national network and wholesale services. But don't expect to find in Fletcher's book, either, a convincing answer to Ergas's central criticism about the laziness of Telstra's infrastructure competitors. Why is Optus offering service to only 60% of the homes passed by its cable network? Why was it Hutchison, not Optus, that pioneered 3G mobile in Australia and Telstra, not Optus, that built the high-speed NextG network in 2006 that its competitors have been scrambling to catch up with ever since?

There is not a sentence in each of these books that would cause discomfort to the two corporations whose respective positions they effectively represent. That seems like a lost opportunity, because few authors could be better placed to probe the weaknesses of the cases they have spent so long presenting than these two insider/outsiders. Ergas's consideration of four responses to 'Australia's telecommunications impasse', in particular, is thin, heavier on abstraction and assertion than evidence and argument. On the critical issue of structural separation, British economist Martin Cave's (Telstra commissioned) June 2008 paper is much better grounded in recent evidence and thus a more persuasive presentation of the case the local incumbent is pressing.

Just as Kevin Rudd talked up history when announcing his plan for a broadband future, the battle that Ergas and Fletcher stage over Australia's telecoms future is all about the story they take from the experience of competition in the recent past. Fletcher, bruised by the commercial failure of Optus's aggressive establishment of a second fixed line network, learned caution. Although he says competition in mobile has been 'spectacularly successful' (Fletcher, 2009: 211), in fixed line, 'The right approach is not to fantasise about a second network that will never arrive; it is to impose careful, targeted regulation on the first network' (Fletcher, 2009: 215). Ergas, believing true competition has never really been tried, learned regulatory forbearance:

> [I]n recent years Australians have been living off the investments previous generations made in infrastructure. Those investments left us with considerable built up capacity, in some cases (such as electricity generation) probably more than we needed. The process of microeconomic reform that began in the late 1980s focused on squeezing greater utilization out of those assets. However, fifteen years of strong economic growth, as well as the passage of time and the emergence of new needs and technologies, have brought that process to its end. … we cannot simply rely on investments made in the past – rather, we must now renew and extend them, if we want to assure our continued prosperity… (Ergas, 2008: 192).

Fletcher is getting the structural change he wants, but as a strong supporter of privatization, he will be wary of the size of the role government is taking in the $43 billion NBN Mark 2. Ergas is getting renewed investment, but he's worried that the broadband boosters will build more than is economically sensible.

The Government acknowledges there is still a lot of work to do. In the language of a telecoms project, it is 'rolling out' an Implementation Study, to be completed within 8-9 months.

The PowerPoint has hardly started.

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