

Demystifying What's Happening in New Zealand Telecommunications Regulation

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1 Overview

New Zealand is seeing considerable change in telecommunications after Government decided last year there had to be a regulatory overhaul. This follows concerns such as lack of broadband uptake, and as to the fixed line incumbent, Telecom.

Of most interest is that New Zealand is the first country outside the UK to pick up one the hottest developments around: the BT/Openreach operational separation model.

This has even led to the unthinkable: a proposal by vertically integrated provider, Telecom, that it structurally separate its local access business. Telecom would sell this off to another entity. (Operational separation has the Telco separating business units with high Chinese walls (so the vertically integrated operator still remains owner). Structural separation involves carving off a business unit and selling it to different owners).

These and other fixed line changes have been so major that what would usually be big news - a regulatory review of wholesaling and roaming on the duopoly mobile operators' networks - almost flies under the radar. In the mobile market, New Zealand's regulator (the Commerce Commission) is sending strong signals that it wants to develop an environment which will foster one or more additional networks (in preference to getting other operators (MVNOs) working off the 2 existing networks).

Other big issues include the much delayed introduction of local loop unbundling (LLU), and "upsizing" the current wholesale ADSL broadband services (Unbundled bitstream (UBS).

There are also strong developments in the spectrum space for cellular and WiMAX, etc (New Zealand has a best practice auction mechanism).

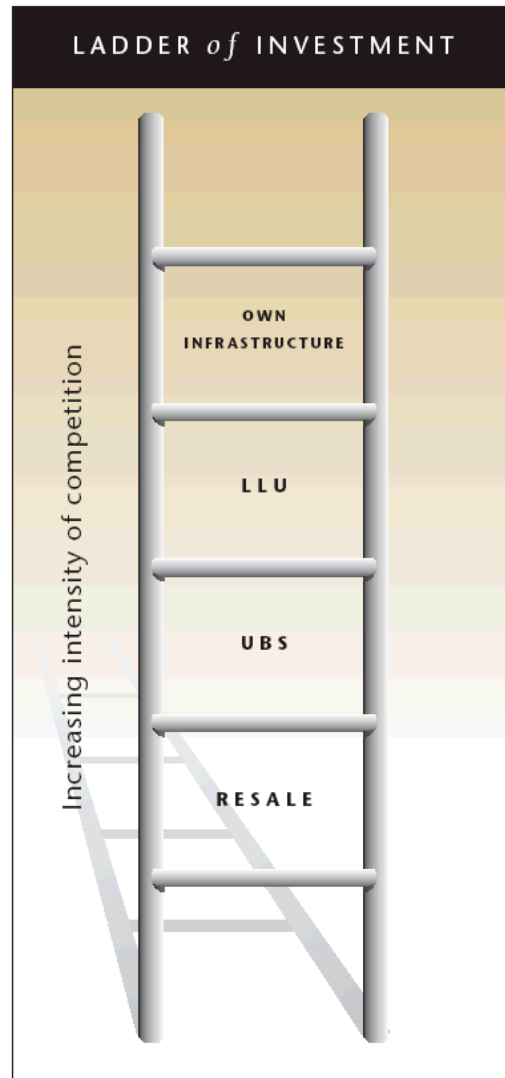
Behind these advances is acceptance of the "ladder of investment" concept (see Diagram 1). This is designed to encourage investment in infrastructure.

Largely off the radar, unlike elsewhere, are key developments: Next Generation Networks (NGN) and also convergence and the impact of content and media. Only recently has a regulatory review of convergence and media issues commenced: see our on-line article, *Convergence and the Media: Regulatory review at last*.

2 LLU and UBS

Under the Telecommunications Act amendment passed in December 2006, New Zealand is getting LLU, years behind other countries. Those countries are dealing with the real issues of the day such as the impact of media, convergence, and NGN. We have outlined NGN aspects in an article on our website "*Next Generation Networks: another reason why Telecom must have robust operational separation*".¹

Diagram 1



There is an air of unreality in our dealing with a legacy issue (LLU) when there is little focus on what, in many ways, is as important – NGN and the increasing impact of convergence and media.

Overview

Talking about LLU and Unbundled Bitstream Services (UBS) calls for a description of some technology. LLU and UBS are comparable services to those available in many other countries. Both deliver services over copper (the local loop). Diagram 2 oversimplifies the position. It shows some of the technology used over local access copper wire to allow ADSL – based broadband. This is delivered over copper to an end-user, from a Telecom exchange (or roadside cabinet). Key is a piece of equipment called a DSLAM². Zeros and ones sent over the copper wires by this method can include data, video and voice (VoIP). That is the so-called "triple play", a

¹ http://www.wigleylaw.com/assets/_Attachments/next-generation-networks---another-reason-why-tele.pdf

² Increasingly DSLAMs are being replaced by equipment called MSANs which is capable of handling multiple types of traffic.

nirvana, to which can be added mobile access, to achieve "quad play".

Traffic passing through the DSLAM typically will go to another part of a network or out onto the Internet.

Unbundled Bitstream Service (UBS): Pre-December 2006

Until LLU and upsized UBS come in, the most that Telecom is required to wholesale is a restrained speed UBS service. Telecom currently requires customers to take a voice line as well as the data/ADSL line (whether

However this regulated service is limited by the pre-December 2006 legislation to an uplink speed of just over twice the speed of dial up (128 Kbps). Although fast downstream speeds are more important (and are much higher), the 128 Kbps uplink is a severe restriction on what ADSL is capable of doing.

This UBS service is provided by Telecom across its own DSLAMs (that's a key difference from LLU, as we outline below). UBS is overviewed in Diagram 2.

UBS calls for an ISP to wrap its own services (such as

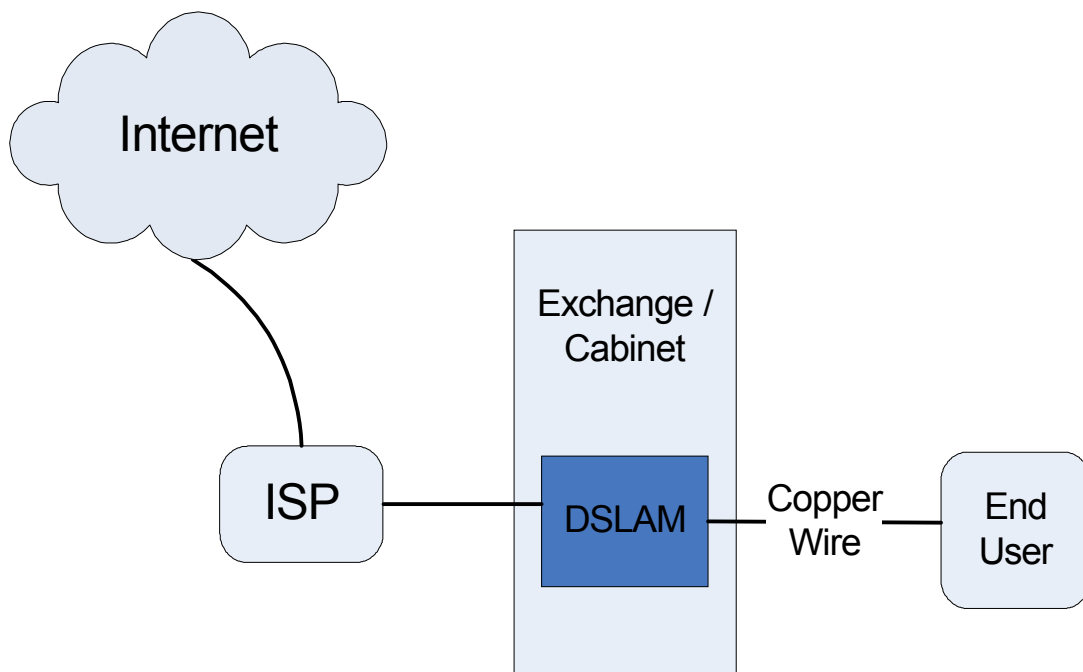


Diagram 2

the ADSL service is provided by Telecom or one of its wholesale customers).

That voice line (a standard PSTN voice line) is the line that has been around for years. It operates in the low copper frequencies. VoIP using ADSL will operate over high copper frequencies as ADSL works using those frequencies. Thus, if ISP X provides an ADSL service (wholesaled to it by Telecom), the customer must still take a PSTN voice line from Telecom. That is the case until the new legislation bites.

Other than resale of Telecom's retail DSL services, regulation up to December 2006 required Telecom to make available to other providers (such as telcos and ISPs) wholesale access to that ADSL service. Called Unbundled Bitstream Service (UBS), this is similar to regulated wholesale services in other countries.³

international connectivity, help desk, etc) around the UBS base⁴, and it might add value-added services too. In this way the ISP comes up with the final product for the customer, based on the UBS input.

Local Loop Unbundling (LLU)

LLU will allow ISPs to move to the next stage beyond UBS. The fundamental practical difference between UBS and LLU is that the ISPs install their own DSLAMs (and associated equipment and systems) in a Telecom exchange or roadside cabinet.

In this way, the ISP gains greater control, and provides more of its own infrastructure into the overall service. The ISP is moving up the ladder of investment (incentivised to do so as it pays less to the incumbent and gains more control). It is able to provide the triple

³ There are differences such as the layer of service provided, whether over ATM or Ethernet, etc. However there are broad similarities.

⁴ To which is added backhaul from the DSLAM to the ISP's servers.

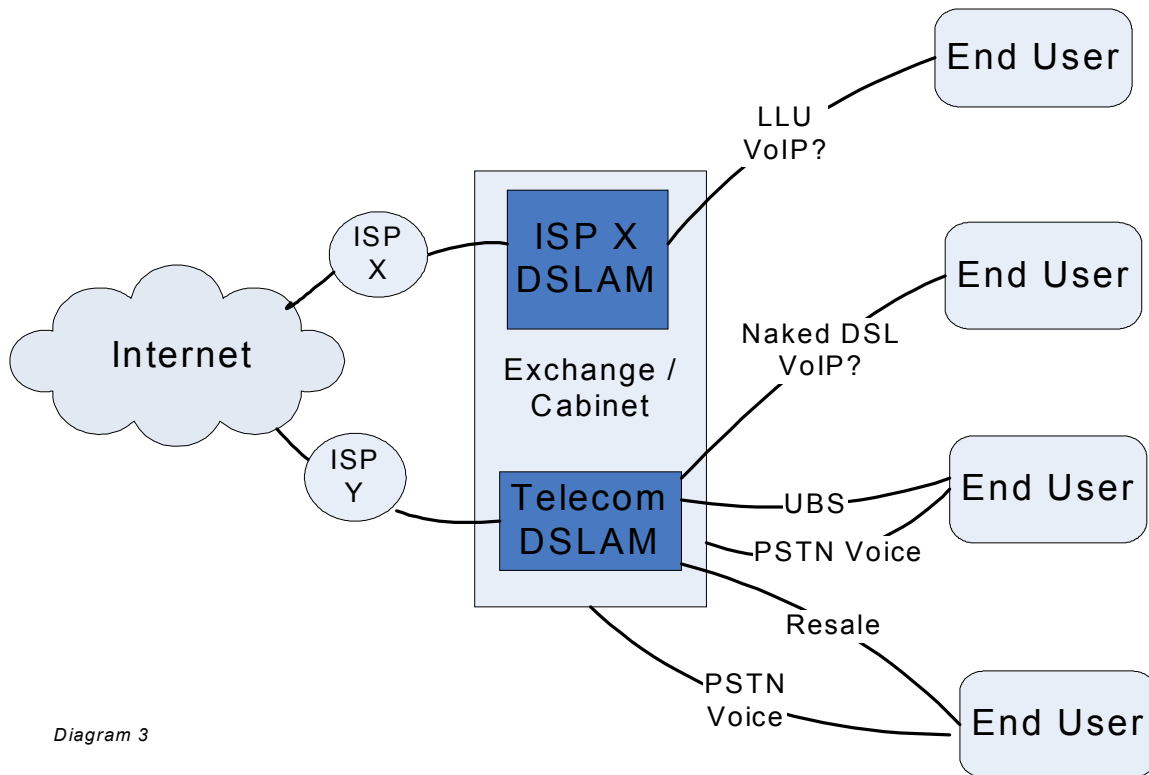


Diagram 3

play solution noted above, which includes VoIP. That can replace the standard Telecom PSTN voice service.

Upsized UBS

The amendment to the legislation has also introduced an upsized version of the existing UBS (sometimes called Enhanced UBS or Clothed DSL). This potentially removes the regulated speed restraints on the uplink (that is, the 128 Kbps restraint). That would enable the access provider to supply a full range of services such as VoIP, video and data services.

So this is another way of achieving triple play, although with this option, the end user is still required to buy the basic phone line as well.

Naked DSL

In addition to Enhanced/upsized UBS and LLU, there is a new option: naked DSL. This is a solution which allows a competing carrier to take UBS on a particular line, and the end user is not required to take the standard Telecom voice service as well. In this way, the other carrier can provide the voice service by way of VoIP (or no fixed line voice service is supplied at all and instead the end user just uses a cellular mobile phone).

This is obviously a suitable bundled solution option for a cellular provider (standard phone access is made available through cellular and data access is provided via Naked DSL).

Ladder of Investment

Each of these steps in order (resale, UBS, Naked DSL and LLU) involve increasing levels of input and infrastructure provided by the ISP or competing Telco. They are outlined in Diagram 3. It is generally recognised that facilities-based competition is better for end users. Facilities-based competition is the goal of the ladder of investment that underpins the new regulatory structure under the new Act.

The amendment to the legislation requires the regulator to try to price each of these services in a way that is designed to encourage providers to climb the so-called ladder of investment (see Diagram 1). As we point out in the next section, this has its issues, partly because there is an apples and pears situation: UBS and naked DSL are priced on a retail-minus basis and LLU attracts cost-based pricing.

3 Retail-Minus (ECPR) vs Cost-Based Pricing

New Zealand's regulated telecommunications services are typically priced on a retail-minus or a cost-based model. New Zealand has largely led the world with retail-minus, with its acceptance of the Baumol-Willig Rule in the 1994 *Telecom v Clear* Privy Council decision. The retail-minus model in the legislation largely encapsulates that rule. First there is the "retail" calculation and then the "minus" deduction. For the "retail" component, broadly, the model takes the retail price for the service. Generally this is the retail price-equivalent of the particular wholesale service, which is imputed from the access provider's ultimate retail price to its customer.

From the “retail” figure is deducted the “minus”. In rough terms, avoided costs are taken out (such as sales and marketing costs). The only decision so far on any wholesale service has set the “minus” part of the calculation at 16%.⁵ To date that figure, by default, has become the amount that is applied in regulation even though the actual “minus” figure for particular services (such as broadband) may be a lot higher.

The retail-minus model in this basic form (eg without price/margin squeeze protection mechanisms) does not have widespread uptake internationally. It has always been controversial, and is condemned by some regulators. The Commerce Commission itself noted difficulties (including practical difficulties in implementation) in its submissions to the Select Committee considering the Telecommunications Amendment Bill.

The United Kingdom’s Competition Appeal Tribunal, in its December 2006 *Albion* decision, added strong appellate concerns. This is outlined in the articles on our website:

- “Retail-Minus Pricing (aka ECPR) panned by UK’s Competition Appeal Authority”; and
- “Problems for NZ’s UBS Pricing Apparent from New UK Judgment”.

As the second of these articles points out, the Commission faces problems in endeavouring to do what it is asked to achieve: relativity in the pricing of three products (Naked DSL, Enhanced UBS and LLU), when the first two have pricing which is conceptually different (retail-minus) from LLU (cost-based pricing (TSLRIC)).

The problem is made worse as the source of the “retail” limb of the retail-minus pricing, namely the incumbent’s retail price, is not regulated. It is generally accepted that retail-minus only works, where there is substantial market power, if the retail price is regulated.⁶ In any event, as the incumbent controls the retail price, it is not possible for the regulator to control the price relativity between the three products.

4 Process Amendments

Previously, if an access seeker wanted a regulated service and this could not be agreed commercially, it had to apply to the Commission for a determination. The new legislation adds an option. The Commission can ask for a standard terms determination. Broadly, the access provider is required to come up with detailed non-price terms for the service. The Commission then produces a response which includes price and non-price terms. The stakeholders have opportunities to provide input throughout and then a final determination is made.

⁵ Determination 497. A commercial agreement with one party last year increased that to 18%, but Telecom does not accept that increase in regulatory proceedings.

⁶ The position is summarised in the *Albion* decision

The Commission is following this Standard Terms Determination path for the new services such as Naked DSL, Enhanced UBS and LLU).

There’s a new option as well which applies when the Commission is considering whether to regulate a new service. The provider can put up a draft undertaking for comment by stakeholders, and review (and possible acceptance) by the Commission.

5 Structural, Operational and Accounting Separation

Telecommunication regulatory regimes frequently require an incumbent to provide detailed accounting information about their operations. This allows assessments as to compliance with regulation, whether there should be further regulation, and so on. Standard accounting information is often inadequate for this purpose. For example, transfer pricing between business units may work for internal purposes but not accurately reflect the position externally for regulatory purposes.

Long after many countries have done so, the new legislation calls for regulatory accounts.

This is often called accounting separation even though in reality it is just a reporting mechanism. It helps overcome a major problem in dealing with incumbents: the information asymmetry as between the incumbent (which holds most of the cards); and others (in particular the regulator and other providers).

The Act also adds “operational separation” on top of the accounting separation structure. This calls for Telecom to be divided into at least 3 clearly segmented business units with high Chinese walls. There will be a separate division for the local access network, one for wholesale, with at least one other division (eg, a division for Telecom’s retail dealings with its own end user customers). The aim is to achieve equivalence in Telecom’s dealings with its wholesale customers and its retail channels, non-discrimination, and transparency.

Behind the model is what is regarded as a successful development in 2005: the undertakings that BT gave to the UK regulator, Ofcom (see Diagram 4 below). The undertakings operationally separated BT three ways: the network (in a division called Openreach), wholesale and, in broad terms, the rest of BT. This is the model that is likely to be adopted in New Zealand.

The economic rationale behind this structure, as articulated by the UK regulator, Ofcom, includes:

- Traditional regulatory solutions, such as those dealing with retail and wholesale products (eg: price control, regulation of services like UBS etc) were failing. This happened in part because legislation and the regulators could not keep up with incumbents, who could game the situation.
- Facilities-based competition should be encouraged (that is, investment in infrastructure by incumbents and challengers alike should be encouraged). However there is a major hurdle to challengers investing, namely what is called the “enduring

economic bottleneck". This comprises much of the incumbent's network (including but not limited to local access). If a solution could be found to the enduring economic bottleneck, then challengers would be more likely to climb the ladder of investment. The solution revolves around (a) Openreach; (b) operationally separated BT Wholesale and (c) the requirement, for specified services, to provide exactly the same service and prices to wholesale and wholesale channels, as BT supplies to itself. This equivalence is labelled "equivalence of inputs" and is a fundamental part of the model. There is independent oversight to ensure compliance.

There were several motivations for BT to agree the Undertakings. Apart from staving off further regulatory attack, BT got more certainty to enable it to justify investment in its NGN. Additionally, the Undertakings would lead to gradual withdrawal of other regulated services.

Getting on to 2 years later, the UK regulator (Ofcom) is giving favourable reports on the BT undertakings so far. Much of this has to do with a particularly strong and well resourced regulator and, with some expected wrinkles, an incumbent that has embraced the structure, including for good business reasons.

In trying to push back on regulation last year, Telecom submitted to Government that it too would agree to undertakings largely the same as BT's. This was part of the path to the legislation that was ultimately passed. Telecom bought into and promoted the model, although it has since pushed back on this.

The Act includes legislation for implementation of a separation plan. High level principles are set out in the Act with the detail to be resolved as between Telecom and the Minister (with public consultation). The Minister finally decides whether the plan is acceptable (or he imposes a solution if it is not agreed).

The first formal step will be a determination by the Minister as to the principles to be included in the undertakings. Government has issued a discussion paper outlining the possible contents of the undertakings. This largely follows the BT model (for example it adopts the robust equivalence of inputs approach). However, there are some notable omissions, such as partial circuits (local access services that are suitable for businesses). The paper caters little for NGN, which is a key feature of the BT Undertakings. There are also differences such as the inclusion of some services in the wholesale unit rather than the network business.

Telecom's response to this discussion paper has been to focus on changing to a different model: structural separation of the local and regional access network business. That would be sold to a different company with owners other than Telecom. Under its proposal, price and non-price terms for regulated services would, in a complete legislative and policy reversal, be fixed by Government and not the regulator.

Telecom made a number of criticisms of the operational separation model, despite the fact that it initially

promoted a more robust form of operational separation than is set out in the discussion paper.

Government has indicated it is unlikely to run with this last minute radical change to the operational separation model. It would require considerable legislative and policy change. Government is not prepared to do that. If structural separation can fit around the operational separation model, it can be considered. As the Minister said:

"Telecom's proposal on structural separation did not, however, provide detailed feedback on the design of the operational separation contained in the government's discussion document. This was an interesting move, given that their unsubstantiated general criticism of unworkability flew in the face of recent UK and EU experience."

Telecom, in supporting its call for an about-face in favour of structural separation, raised what is a major issue in many countries: inadequate incentives to invest in NGN access initiatives (particularly fibre roll-out). They used this to justify structural separation in place of the proposed operational separation.

NGN access is a challenge internationally⁸. However, the challenge is not necessarily better met by a structurally separated local and regional access company, which is short of an optimal approach.

So, Government is rapidly moving down a path of a BT Undertaking look-alike, although a negotiated solution can be expected and is desirable (as happened in the UK).

⁷ Speech by Minister of Communications to TUANZ; 31 May 2007

⁸ See for example, *Pipedreams? Prospects for Next Generation Broadband*, Broadband Stakeholders Group (UK) 16 April 2007 <http://www.broadbanduk.org/content/view/236/7/>

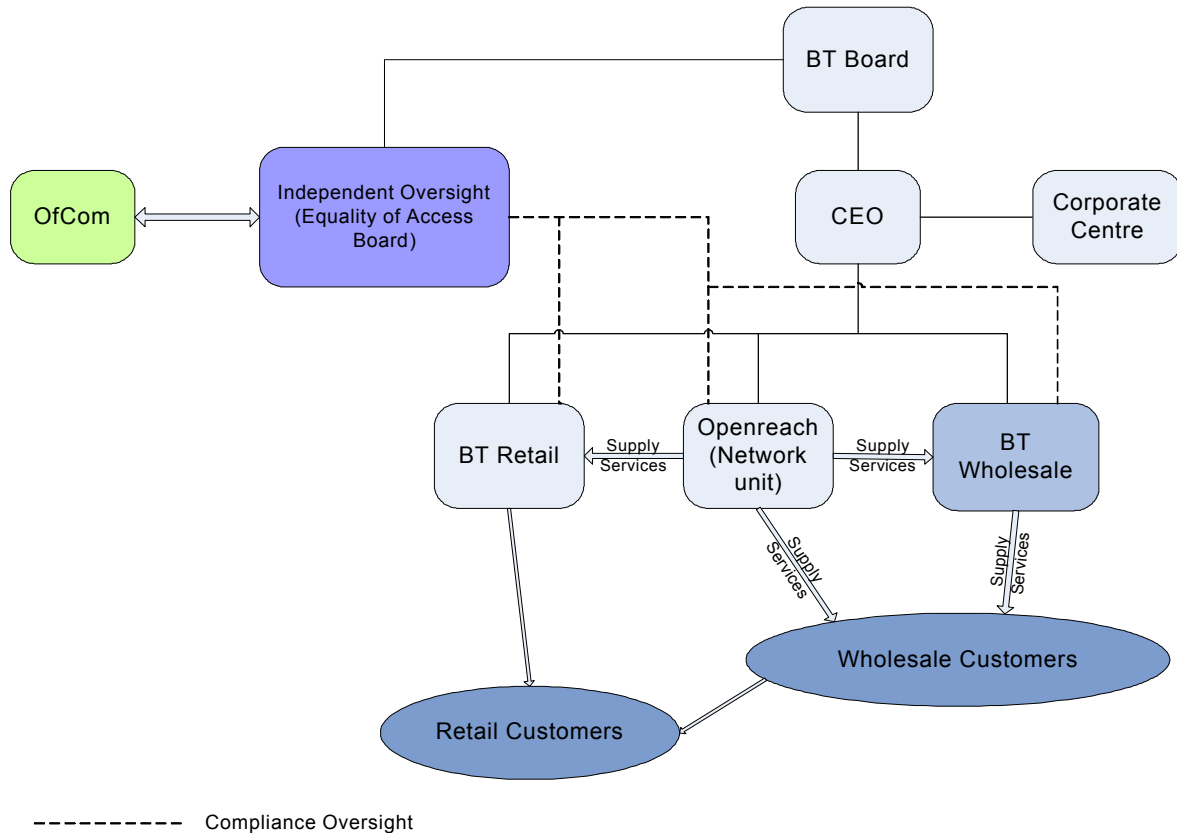


Diagram 4

Operational separation is a remarkable development for New Zealand, but legislating this is only the start. The difficult process of negotiating the complex undertakings requires heavy resourcing within Government and input from third parties.

Then the process of monitoring the undertakings will be critical as well.

One of the features of the new Act is that it gives the Commission significantly more proactive powers to take steps in relation to the industry rather than its current largely reactive role.

All this will place strains and demands on the Commission and, again, critical will be adequate resourcing.

6 Mobile Services Review

New Zealand is relatively rare in the OECD as it only has two mobile networks. Even more unique is that each network has different technologies that don't work together (GSM and CDMA). This further reduces competitive tensions.

There are four types of regulated services which could be particularly useful for new entrant cellular operators:

- The ability to roam on an incumbent's network.

- The ability to co-locate antennae etc at existing cellular sites.
- Spectrum in the 800 MHz and 900 MHz ranges. Telecom provides its non-3G services (ie CDMA) using the 800 MHz range and Vodafone provides its non-3G services (ie GSM) in the 900 MHz range.
- The ability to require Vodafone or Telecom to provide a wholesale service to a new entrant.

That last option is one which would be typically available to a Mobile Virtual Network Operator (MVNO). The classic international example of an MVNO is Virgin Mobile. An MVNO is less likely to drive network investment and inter-network competition beyond the two carriers, as it operates off an existing network. It is generally recognised that infrastructure investment is a preferable position, and the end result of the ladder of investment. Thus, encouraging a third network is to be preferred to, at least initially, encouraging MVNOs.

In October last year, the Commission launched a review as to whether there should be changed or new regulated mobile services.

The Commission has focused on facilitating one or more new networks (ie inter-network competition) by improved roaming and co-location regulatory. The Act has a regulated service for roaming and co-location respectively (these are close to essential for new network

developers). But there is a critical omission. Unlike most other regulated services, the Commission cannot determine price. This makes such “regulated” services largely unregulated in practice.

The Commission could have chosen just to signal a mobile services review. However it went much further than this. It pointed strongly to high barriers to entry, insufficient competition, retail prices that are too high, etc. It has sent a strong signal that it will look closely at changing the roaming definition and that it will seek to have the ability to fix prices as part of the regulated services.

If the Commission finally decides this way, and the Minister accepts its recommendation, this provides a markedly changed environment for new entrants. The idea of regulating wholesale services (that is, the service that would favour MVNO new entrants) has been put on the back burner. However, getting three networks up and running is more likely to foster robust MVNOs in the long-run. The combination of three networks and additional MVNOs is pro-competitive.

In parallel with this review, one of the two incumbents, Vodafone, has put forward a draft undertaking for review under the new legislation.

A particularly contentious issue will be roaming pricing. There is remarkably little international precedent for regulated roaming pricing.⁹ This may reflect either or both adequate competition elsewhere, or agreement of roaming prices following regulatory pressure.

7 Cellular Spectrum

Spectrum in the 800-900 MHz range is important for a new entrant, particularly to enable economic coverage in less densely populated areas. However, the two incumbents, Telecom and Vodafone, have the entire relevant spectrum. Those rights expire in around 4–5 years. In the normal course, that spectrum would be reallocated to them 5 years ahead, under a Cabinet directive. Spectrum is not handled by the Commerce Commission but rather by a Government Department (the Ministry of Economic Development). A key exception is that if a spectrum holding constitutes a breach of the significant market power provisions in the Commerce Act, the Commission can become involved.¹⁰

The fact that there are separate agencies dealing with this, means that the Commission might be able to sort out roaming and co-location but there could still be an insurmountable barrier to entry at the spectrum level. As part of going further than it might otherwise go, the Commission telegraphed that it considered that the

barriers to entry in relation to the 800 and 900 ranges are too high, and it would liaise with the Ministry.

The Ministry considered what to do about this spectrum. If it followed the “*standard*” path, Vodafone and Telecom would retain all the rights. This would mean that the new entrants are dependent on being able to buy spectrum from one of the existing two providers. There are contentious issues around this but the outcome has been that the Minister has left most of the spectrum with the incumbents, and released a small part of the 800 and 900 spectrum for auction (that is, it is potentially available to a new entrant). There is a structure that will encourage early release of that spectrum.

8 Mobile Termination Rates

Mobile to mobile termination rates are unregulated. Whether to regulate fixed-to-mobile rates has been investigated by the Commission. Moving to regulation of these rates has been through a tortuous process. The Commission recommended that fixed-to-mobile termination rates be regulated (so that a price for terminating from fixed networks onto mobile networks could be determined). But the Commission excluded 3G.

In the midst of commercial offers from Telecom and Vodafone to resolve this, the Minister asked the Commission to revisit whether 3G should be included. The Commission then decided that 3G should be included.

This was sent back to the Minister for review following the process in our regulatory structure. The rates have recently been resolved by the Minister accepting undertakings from the two incumbents (Telecom and Vodafone). Under those undertakings, rates will drop over a several-year glide path, but they will remain relatively high, benchmarked against OECD countries.

9 Cellular Local Access

The Commission made a determination last year which allows Vodafone to interconnect with Telecom’s PSTN on a Sender Keep All basis (effectively neither Telecom nor Vodafone bill each other for exchanging the call when the call occurs within a short distance of a particular location such as a home). This is potentially of great benefit to mobile operators that do not have a fixed network.

10 Spectrum: Broadband Wireless Access

This covers technologies such as WiMAX. After an investigation by the Ministry of Economic Development last year, the Minister announced that there will be a freeing up of spectrum for these technologies. Spectrum in the 2.3 GHz range – which is suitable for emerging wireless broadband applications like WiMAX – will be put up for auction in 2007. The auction would apply spectrum caps (ie no provider can acquire more than a limited range of spectrum) so that at least three providers could acquire spectrum. The Minister is following an approach first adopted in relation to the 3G spectrum auctions, to make sure that there is no aggregation of spectrum in the hands of only one or two providers. This

⁹ The recent developments in the EU apply to international not domestic roaming pricing

¹⁰ Vodafone obtained authorisation from the Commission to acquire all of the 900 MHz range Management Rights. However this does not apply beyond the expiry of the current term, nor to licensing of the existing rights (the spectrum regime is made up of Management Rights and the ability to licence those rights).

is recognition that competition law alone cannot meet all needs in relation to spectrum.

Since the initial decision, Government has added three additional blocks to the auction, which is suitable for WiMAX, in the 2.5 GHz range. This allays industry concern that having only three blocks available would not be sufficient.

The Broadband Wireless Access spectrum decision is notable for some excellent initiatives. New Zealand is internationally regarded as having a best practice structure for dealing with spectrum. These are set out in the article on our website at www.wigleylaw.com:
Broadband Wireless Spectrum: an excellent solution.

11 Number Portability

The long drawn out delays in bringing about number portability have come to an end this year. These delays

symbolise just how long regulatory reform can take in New Zealand.

12 Conclusion

Much is happening in New Zealand. Like the BT Undertakings, the new operational separation undertakings will provide valuable information for ongoing debate about this new regulatory tool, which many regulators are considering.

We welcome your feedback on this article and any enquiries in relation to its contents. This article is intended to provide a summary of the material covered and does not constitute legal advice. We can provide specialist legal advice on the full range of matters contained in this article.

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