

POSITION PAPER
Local loop unbundling (LLU)



Description:

The Government's May 2006 Telecommunications Stocktake report defined local loop unbundling (LLU) as a requirement on the incumbent telecommunications provider to allow other service providers to access and use the copper circuit from the telephone exchange to the customer premises. The report described the main characteristics of the LLU service as:

- Access to the copper local loop provided at both the local exchange (full LLU) and at the cabinet (sub-loop unbundling);
- A co-location service which allows entrants to install their equipment in Telecom's exchanges and cabinets;
- Two backhaul services which allow entrants to connect their co-located equipment (either in the exchange or the cabinet) to their network;
- Initial price based on benchmarking against comparable countries with a final price based on TSLRIC.

In some countries LLU is referred to as unbundling the local loop (ULL) or the unconditioned local loop. LLU is not a complete service on its own - other significant network components are required in order to deliver a voice or internet service to customers.

The Stocktake report did not recommend fibre local loop unbundling, on the basis that it would have implications for new entrants. ISPANZ does not agree and believes that LLU should be technology neutral, but only applicable where there is a monopoly incumbent local network provider.

Background:

New Zealand is one of only four of the 30 OECD countries that has not yet unbundled its local loop, to the detriment of the telecommunications industry and its customers.

In September 2003 the Commerce Commission issued a draft recommendation to the New Zealand Government proposing LLU as the best way to enhance competition and ultimately improve the country's OECD broadband uptake ranking, which lies well close to bottom. Unfortunately, under significant pressure from Telecom, this recommendation was revoked at the last minute, with the Commission's final recommendation in December 2003 proposing unbundled bitstream service (UBS) – a wholesale product - in favour of LLU (*please see ISPANZ UBS Position Paper*). Not wanting to go against Commerce Commission recommendations, the Government approved this course of action.

The Government's May 2006 Telecommunications Stocktake report changed this, recommending the implementation of LLU as part of a package of measures to improve the New Zealand telecommunications regime. The implementation details

and timeline are still being developed, but we are in the enviable position of being able to learn from the experiences of other countries that have preceded us down this path.

Line spectrum share (LSS) is a form of LLU in widespread use in Australia, where the high frequency broadband spectrum on the copper telephone line is split off for use by competing service providers, while the lower frequency voice spectrum is retained by Telstra.

LSS has allowed several competing service providers to implement their own infrastructure (Digital Subscriber Line Access Multiplexer or DSLAMs) to provide fast and affordable broadband services to customers. However, the Australian Competition and Consumer Commission (ACCC) is continuing to challenge the pricing that Telstra has proposed for access to the ULL, stating that it is double what it should be. Nevertheless, in Australia, as in the UK, competitors have earned over 60% broadband market share. LSS is not considered a viable alternative to full LLU in New Zealand and was not recommended by the Stocktake report.

Because traditional exchange service areas can have longer copper line distances than are ideal for ADSL broadband, incumbent operators sometimes install fibre-fed cabinets in the street closer to the customer to shorten the copper line distance and improve broadband performance. This process is sometimes called cabinetisation.

Issues:

While there is increasing recognition that advanced broadband services are a key enabler of economic performance, the May 2006 Stocktake report noted that there is a significant gap between New Zealand and leading OECD nations in terms of broadband performance.

An InternetNZ / Wairau Consulting research report also released in May 2006 analysed 2,586 broadband packages from 26 OECD countries, on a range of indicators including download and upload speeds, costs, data caps, variety of offerings, contention ratios and finally an overall ranking table, which ranked New Zealand 22nd out of the 26 countries.

It is now clear that the Government's decision not to proceed with LLU in 2004 was a mistake, and Telecom's implementation of a commercial UBS service has not served to move New Zealand forward at the necessary pace. Even the Government holding Telecom to a residential broadband target of 250,000 broadband customers by the end of 2005, with one third of the total to be wholesale, did not make enough difference, with the wholesale target not met.

The greatest risk to LLU delivering on its promise of faster cheaper broadband from new entrants comes from possible changes to the incumbent's traditional copper local loop. Traditional copper local loop can deliver excellent broadband service using ADSL2+, as witnessed by the data depicted in figure 1 below from iiNet's ADSL2+ network using Telstra's copper local loop in Sydney. This shows that the existing copper is capable of delivering better than 14Mbps to 50% of customers, and better than 6Mbps to 90% of customers in the Sydney metropolitan area. This is without any cabinetisation of these exchange areas of typically 2-3km radius.

Where copper distances are greater than 4km installing DSLAMs in street cabinets reduces the local loop distance and thus enhances the broadband performance. However retrospectively installing DSLAMs in fibre-fed cabinets on local loop closer than 4km to the exchange provides negligible benefit to the broadband customer, and could be argued as having a primarily anticompetitive purpose. Note that this anticompetitive argument does not apply where fibre-fed cabinets are installed in newly developed areas, nor does it apply to street cabinets used only for copper cross-connect purposes.

ISPANZ has only limited understanding of the degree of cabinetisation that has occurred to date in Telecom's local loop, as Telecom refuse to provide details. It is significant that where local loop cables are connected to DSLAMs in street cabinets, the copper is also separately connected to transmission multiplexers that separately carry the voice traffic back to traditional PSTN switch at the exchange site. The equipment used for this is bulky and contributes significantly to any capacity issues in Telecom's cabinets today. This equipment will not be required once Telecom roll out their NGN, so space could then be available for new entrant DSLAMs in the existing cabinets.

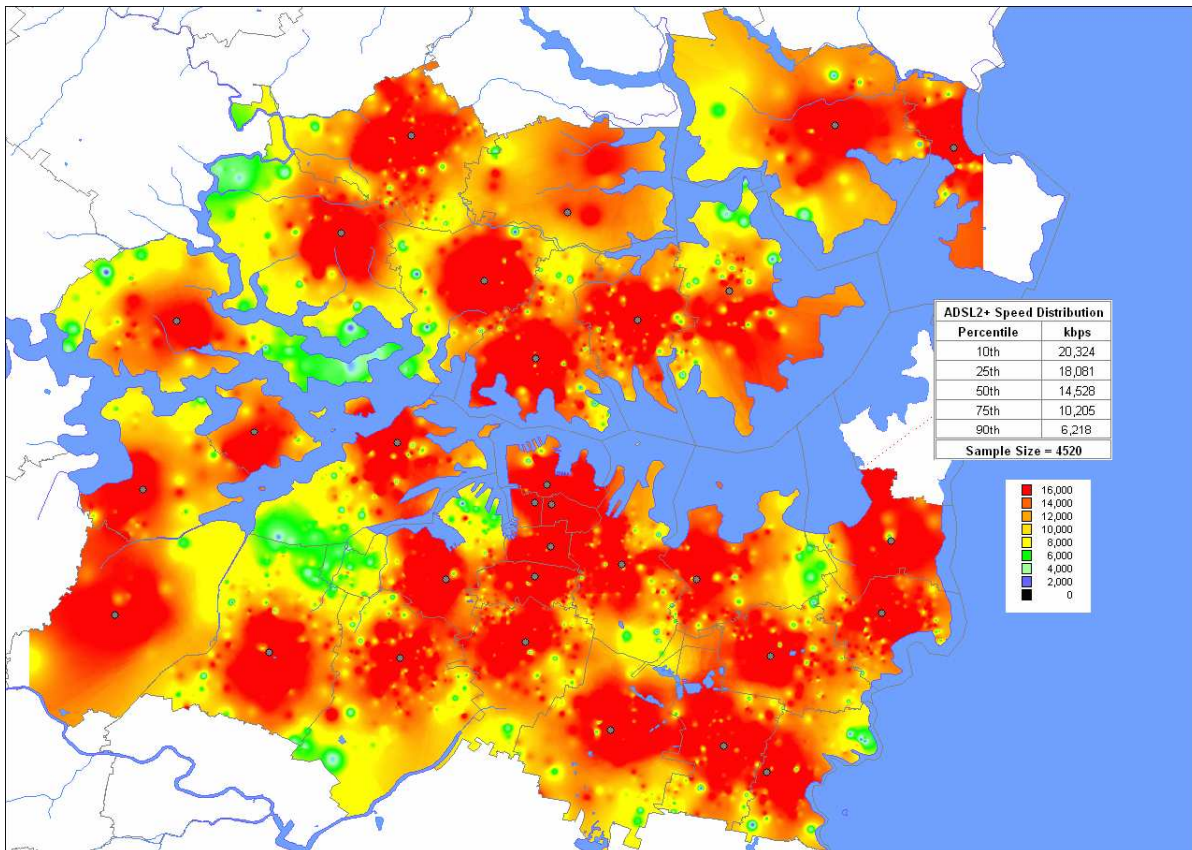


Figure1. iiNet Sydney ADSL2+ performance

As well as this, the opportunity to benefit from LLU can be diminished by:

- Installing street cabinets with no capacity for new entrant's equipment.
- Providing backhaul from street cabinets that has no capacity for new entrants.

- Various tactics to ensure there is no capacity available in exchanges (including space, power and other services) for new entrant's equipment. These tactics may include shutting down those exchanges.
- Unreasonable charges for co-location services in exchanges or cabinets, including unreasonable charges for activities such as jumpering.
- Possible encumbering of new entrants with upgrade costs where the incumbent is the prime beneficiary.
- Unreasonable charges for backhaul from exchanges or cabinets.
- Unreasonable terms for these co-location services, such as restricted access or restrictions on third-party contractors or service providers.
- Unreasonable constraints on the use of the local loop, such as unique spectrum management regimes that are not comparable with international best practice.
- Unreasonable implementation delays allowing the incumbent more time to better protect their traditional revenue streams.

A final issue that could destroy the potential value to be gained from LLU is pricing relativity with other means of providing broadband, especially UBS and Naked DSL.

Position:

ISPANZ welcomes the Government's Stocktake report and eagerly awaits the implementation of the recommended improvement measures, including LLU. It should be noted that LLU will not replace UBS, but rather augment it. Larger service providers will have the ability to invest in the necessary infrastructure as they grow their customer bases, while smaller service providers will still rely on reselling UBS or alternatively, wholesale products supplied by new infrastructure owners.

It should be clear from the preceding issues section that there are many risks to receiving the full benefit promised by LLU, many of them arising from possible behaviours from the incumbent. There is much to be learned from international experience to help New Zealand avoid pitfalls and delays. An appropriate balance is needed between up-front regulation and a suitably empowered Commissioner, who can make rapid determinations on pricing and other detail terms, and proactively create and enforce rules to resolve disputes.

ISPANZ supports the concept of industry driven codes of practice, but our industry's history in this area is not good. Therefore if industry codes are to have a place in progressing LLU, they must be effectively timetabled and back-stopped by the Commissioner.

The following are ISPANZ' recommendations on LLU implementation:

Local network information

ISPANZ considers it critical that Telecom be required to provide full disclosure of local loop information relevant to a new entrant planning to implement LLU. This information should be comprehensively provided, including in GIS form, and must include future upgrade plans, especially concerning cabinetisation and increased fibre penetration.

ISPANZ does not believe this information should remain confidential to Telecom as it is essential for wholesale-retail parity and should be provided with urgency to enable new entrants to prepare their LLU implementation plans.

LLU line

ISPANZ agrees with the Stocktake report that the LLU Line price (for both full and sub-loop unbundling) should be benchmarking against comparable countries with a final price based on TSLRIC, to be determined by the Commissioner. This price should be uniform nationwide and must be set with the Government's OECD broadband target in mind and with appropriate relativity to UBS pricing.

ISPANZ believes that where street cabinets are deployed today, but the copper lines also terminate at an exchange, that Telecom be required to leave that copper in place for new entrant LLU access wherever the local loop distance is suitable for ADSL service (~4km or less).

Any spectrum management implemented must be to a standard approved by the Commissioner after appropriate industry consultation.

ISPANZ also believes that regulated LLU should be technology neutral and potentially apply to fibre and other technologies where they are the form of local loop used by the incumbent. Fibre unbundling already exists in some countries such as Japan.

Exchange co-location

ISPANZ recommends a standard rack design with standardised power and cooling provision, to be made available within fair implementation timeframe SLAs for a standard price benchmarked against comparable local co-location services. ISPANZ also acknowledges that availability SLAs should be linked to a fair forecasting process.

New entrants should have maximum freedom to install whatever equipment they want in the standard colo rack, subject to minimal power, environmental and OSH, requirements. LLU colo rules should allow for co-mingling (where the access seeker's racks can be located in the same space as the incumbent's own equipment racks). Telecom must not impose any compliance standards without approval from the Commissioner. New entrants should also be free to use any third-party contractors or service providers they wish, subject to reasonable access rules.

Jumpering should be carried out by agreed third party contractors to accepted industry standards with SLAs matching retail.

Cabinet co-location

ISPANZ recommends a standard cabinet design should be mandated for all new cabinets, that has capacity for LLU. This cabinet LLU capacity must allow for both new entrant DSLAMs and cable terminal blocks. ISPANZ also recommends that in existing cabinet locations that do not have capacity for new entrant DSLAMs, Telecom be required to provide an adjacent cabinet (or underground pit) for new entrants' equipment, with a standardised price to be cost-based as determined by the Commissioner, and availability SLAs subject to an agreed forecasting process.

ISPANZ recommends that where existing equipment in Telecom's cabinets is made redundant by the NGN roll-out, that it be mandated that this space be made available for new entrant DSLAMs.

An alternative would be the establishment of a streamlined consent process for the new entrants to jointly establish their own adjacent cabinets (or underground pits) and for Telecom to be required to provide space in its cabinet for a terminal block for tie-cable and backhaul connectivity.

Backhaul

ISPANZ recommends that Telecom be required to provide backhaul from both exchanges and cabinets to an agreed interconnect location. ISPANZ has a clear preference for backhaul from cabinets to be provided as dark fibre, as it is likely that Telecom will have spare fibre pairs in its feeder cables, but only limited capacity in its existing backhaul transmission.

The alternative would be backhaul capacity in Telecom's transmission. The backhaul specification and availability must at least match what Telecom provides for its own customers, whatever the technology. Ideally interfaces should be Ethernet. New entrants must be able to specify their own backhaul capacity requirements. Where backhaul capacity is limited it must be shared equitably per end customer until such time as it can be upgraded.

The backhaul pricing should be benchmarking against comparable countries with final price(s) based on TSLRIC, to be determined by the Commissioner

New entrants must be free to mix their own backhaul with regulated backhaul from Telecom, with no "all or nothing" requirement as with today's commercial UBS backhaul.

Sundry charges

ISPANZ believes that all sundry charges (connection, churn, MACs etc) should be cost-based as determined by the Commissioner.

Regulation, enforcement and dispute resolution

ISPANZ believes that these high level recommendations should form an integral part of the Government's proposed telecommunications reform legislation, with price and other detail terms to be determined by a newly empowered Commissioner. ISPANZ believes that the Commissioner should have the power to enforce consequences where SLAs are not met. The Commissioner should also be given the role of resolving any disputes that arise between the parties.

Implementation

ISPANZ believes that LLU implementation must proceed with maximum speed in order to provide real benefit to the average New Zealander. Consideration should be given to a staged implementation to enable the easy wins while the harder issues are still being addressed (e.g. full LLU in exchanges ahead of sub-loop LLU in cabinets). Local network information must be made available urgently to enable new entrant roll-out planning to commence.

Broadband Roadmap

Following the broadband roadmap for New Zealand (*please see ISPANZ Broadband Roadmap Position Paper*), which is only possible with regulatory support, will create an environment whereby competition occurs at a number of levels from multiple competitors. As a result:

- Our poor international ranking for broadband uptake will improve
- New Zealand businesses will be more competitive in the international market
- The average New Zealander will be able to benefit from lower prices and better services
- New Zealand as a country will reap the significant economic advantages of a broadband enabled society.

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About ISPANZ:

ISPANZ is a non profit, industry group that represents most Internet Service Providers operating in New Zealand. Our membership includes all the major ISPs outside those of Telecom and TelstraClear; plus a broad range of medium and small ISPs. We exist to promote a fair and fully competitive Internet marketplace where our members can deliver the full benefits of the Internet to the New Zealand public and our economy. Our primary goals are to:

- Improve New Zealand's poor International ranking for broadband uptake,
- Enable New Zealand businesses to become more competitive internationally through use of Internet enabled technology,
- Improve Internet pricing and services for ordinary New Zealanders,
- Enable New Zealand to reap significant economic benefits as it becomes a broadband enabled society.

For more information please visit ispanz.org.nz