LOCAL LOOP UNBUNDLING

A REPORT FOR CLEAR

JULY 2000

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EXECUTIVE SUMMARY

1. The approach to cost benefit analysis taken in the Ovum paper and in the re-calculation of the Ovum model in the submission made by Telecom New Zealand (TCNZ) are strongly biased against LLU as they do not include a number of key benefits, particularly those arising from additional competition. These benefits (such as the development of innovative offerings, falling prices and increased availability of broadband services) are not reflected in the Ovum model, which focuses exclusively on productive efficiency gains.

2. The Ministerial Inquiry has made a number of arguments against LLU. However, we believe that there is a strong case to designate LLU from the outset In particular:

   - That operators are investing in alternative infrastructure does not imply that LLU is unnecessary. TCNZ has a strong position in the local loop. If operators anticipate that TCNZ will be free to exploit this position in the setting of wholesale access charges, there will be an incentive to invest inefficiently in alternative local loop infrastructure. This inefficiency would be avoided if LLU were mandated.

   - The costs of LLU may be considerable, but there are good prima facie reasons to expect that the benefits of LLU in New Zealand should exceed the costs. As our previous report[1] noted, the Ovum study (and by implication TCNZ's modifications of it) is systematically biased, since it does not include key categories of benefit that have been identified in other studies;

   - It is not reasonable to conclude that an obligation on TCNZ to provide a wholesale access product would provide similar outcomes to LLU. In particular, TCNZ's incentives to roll-out broadband access are enhanced by LLU since it removes TCNZ's reluctance to roll-out new services for fear of cannibalising existing services on which it earns an excess return. Increased roll-out is likely to have significant economic benefits and reduces the possibility of marginal customer groups (such as those in rural or economically deprived areas) being excluded from the benefits of the information society. LLU puts pressure on TCNZ to provide existing and innovative new services efficiently. This cannot be achieved by a wholesale obligation on its own, and LLU should be mandated as a complementary measure.

[1] "A Comment on 'The Economics of Local Loop Unbundling in New Zealand' by Ovum Pty Ltd", DotEcon Ltd, May 2000.

3. Many countries have now mandated LLU, including the entire EU, the US and Australia. There are a number of key factors that indicate that the benefits of LLU should be comparatively greater in New Zealand. The incumbent is very lightly regulated on price (if at all), there is still a high degree of copper in the access network, and there appears to be no real access deficit. Therefore, there is a strong prima facie case for LLU. At the very least, and in the absence of immediate designation, this ought to be sufficient to suppose that the burden should be on TCNZ to show that LLU is undesirable (especially given TCNZ's exclusive access to much of the key data).

4. Any reasonable cost benefit analysis must take account of the allocative efficiency benefits of LLU. However, estimation of these benefits requires access to data that is not generally available and that is likely only to be accessible to TCNZ. To facilitate debate on a level-playing field, this information should be made public.

1. INTRODUCTION

The Ministerial Inquiry into telecommunications has produced provisional recommendations on possible modifications of the regulatory system in New Zealand. This is intended to serve as a focus for further submissions and public hearings.

In this context, DotEcon Ltd. has been asked by Clear Communications Ltd. (following request for further background on LLU by the Inquiry) to prepare a report considering:

- evidence presented to the Inquiry so far on the desirability of local loop unbundling and the Inquiry's provisional findings; and
- how, in principle, a reliable cost-benefit study of LLU could be undertaken and what data it would require.

At this point, it is important that the Inquiry does not take an approach that prejudges any negative decision on LLU. In particular:

- The Inquiry has placed a significant emphasis on precise quantification of costs and benefits of LLU, leading to pro-competitive benefits that may be highly material, but difficult to quantify, being ignored. Unless the benefits of LLU for consumers in terms of greater competition, lower prices and more choice are taken into account (which, to date, they have not) there will be an unjustified bias against LLU.
- At the same time, only TCNZ has access to detailed information required to undertake a detailed cost-benefit study. This makes it difficult for those seeking LLU to prove their case, as TCNZ has no incentive to provide this information (or present it in a useful way), or carry out a comprehensive CBA. This should be addressed by reversing the burden of proof and requiring TCNZ to demonstrate why LLU is not desirable.
- As our previous report to Clear described, the report by Ovum on the costs and benefits of LLU is highly unsatisfactory, not least since it completely ignores the primary pro-competitive benefits of LLU. As such, the Ovum model cannot provide reasonable guidance for the decision whether or not to mandate LLU.

In this report, we address concerns raised by the Inquiry panel, and the arguments against LLU, which we believe to be unfounded. We then describe how a reasonable cost-benefit analysis could be conducted, and what data it would require. We then draw some conclusions with regard to the evidentiary requirements that should govern the process of deciding whether or not to mandate LLU, given a strong prima facie case in favour of LLU and the fact that a large number of countries have now mandated LLU.

2. THE INTERIM FINDINGS OF THE MINISTERIAL INQUIRY

The Ministerial Inquiry has rightly commented that an improved regulatory framework is needed "to encourage and facilitate rapid innovation, high levels of investment and vigorous competition".[2] In addition, the Draft Report makes the reasonable conclusion that general competition law and self-management are desirable ideals, though may need to be backed by industry-specific regulation.

With regard to LLU, the Draft Report makes the following interim conclusions:

- That a set of "designated services" be created, over the supply of which the Electronic Communications Commissioner would have a right to intervene and to resolve disputes. Services could be designated in respect of particular providers or all providers, New Zealand-wide or regionally.

- That the criteria for designation be to promote the long-term interests of end users, with regard to:

  (a) facilitating competition in markets for services; and/or

  (b) promotion of efficient any-to-any connectivity; and/or

  (c) encouragement of the economically efficient use of, and the economically efficient investment in, the infrastructure by which services are supplied.[3]

- That operators face mandatory obligations in respect of designated services, in particular, ensuring that third parties have access to such services at equivalent terms to those at which an operator supplies a service to other parts of its own organisation and facing a broad obligation not to behave in an anti-competitive manner[4];

- That wholesaling of the local loop should be a designated service, allowing entrants to offer integrated packages to customers. The Inquiry acknowledges the concern that the availability of wholesale broadband access would be dependent on TCNZ's roll-out plans;

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2 Ministerial Inquiry into Telecommunications, Draft Report, June 2000, page 1.

3 See section 6.2 of the Draft Report.

4 See pages 26 and 27 of the Draft Report.

- Unbundled access to the local loop is not recommended for immediate designation. The Inquiry compared LLU with alternative regulatory instruments (in particular, wholesaling of access) and was "not convinced that unbundling offers significantly greater benefits to those that could be achieved through Telecom being required to wholesale its local loop service (including its xDSL service) at an efficient price."

2.1. THE INQUIRY'S REASONING ON LLU

The Inquiry appears to have reached its conclusion that LLU should not at present be mandated on the basis of the following:

- alternative network infrastructure is at present being rolled out and so LLU does not appear necessary for competition since local loops are replicable;
- LLU would be an intrusive regulatory development;
- the costs of implementing LLU would be considerable; and
- there are alternative regulatory approaches (in particular wholesaling of access) that can achieve similar results to LLU.

However, we do not consider that any of these points can be taken as decisive evidence against mandated LLU. We consider each in turn below.

2.1.1. ALTERNATIVE INFRASTRUCTURE IS BEING ROLLED OUT

The Inquiry notes that alternative local loops are being built at present. Telstra-Saturn's roll-out may be more ambitious than was originally the case prior to the Telstra-Saturn merger. Central business districts are likely to be well served by rival local loops, including fibre.

This observation that alternative local loops are feasible appears then to lead to two distinct conclusions:

- that investment in alternative local loops is occurring provides evidence in itself that LLU is unnecessary (page 41); and
- that the benefits of LLU are small since many customers will be served by potential alternative local loops (page 42).

Taking the first point, as our previous report made clear, the fact that alternative local loops *can* be built does not necessarily mean that it is economically efficient to do so. For example, if TCNZ exerts market power in providing a wholesale access service, and prices this inefficiently high, then this will lead to greater investment in alternative infrastructure. However, such investment is not necessarily economically efficient if it is driven by the need to avoid being subject to the exercise of market power by TCNZ in wholesale markets.

Therefore, it is incorrect to conclude that the current building of alternative infrastructure means that LLU is not necessary. This could just as much be taken as evidence that considerable benefits could result from mandated LLU, since operators may make such investments anticipating that they will not be able to gain (wholesale) access to TCNZ's local loop at reasonable terms.

Taking the second point, the Draft Report appears to adopt the position that LLU provides *no* incremental benefit in geographical areas where there is an alternative infrastructure in place. Whilst it is clearly the case that the *incremental* benefit of LLU in bringing competition and widening choice will be less where there is already a choice of local loop infrastructure, LLU can still have pro-competitive benefits even in geographical areas where there are competing local loops by reducing the potential for oligopolistic market power.

Furthermore, even though there are many geographical areas and types of customers for which competing local loops are feasible, there must be concerns about access to broadband services for customers in the large number of low density urban and rural areas or in other circumstances that make access to a second local loop infrastructure prohibitively expensive. In the near future, broadband access may well be likely to become a basic service, exclusion from which has social as well as economic implications. In such a case, universal or nearly-universal availability of broadband services may be an important policy goal in its own right.

Given the recommendation that TCNZ be allowed to geographically price discriminate, there must be significant concerns about the possibility of fragmented groups of disadvantaged customers for whom there is little incentive for other operators to provide alternative local loops. Any attempt to provide such infrastructure could lead to focussed price-cutting by TCNZ. Anticipating this, other operators have little incentive to invest in reaching such fragmented groups.

Finally, we note that the Inquiry has pointed to mobile telephony as a possible "alternative local loop". Although 3G will start bringing broadband services to customers in the next few years, there is no immediate prospect of these services being available. In any case, they are unlikely to offer similar bandwidth to xDSL, even in the long run. Therefore, it is not appropriate to consider mobile as an alternative to fixed broadband services over any reasonable timescale.

2.1.2. LLU IS AN INTRUSIVE REGULATORY INTERVENTION

The Draft Report states that it considers LLU to be an intrusive measure since (a) it would be technically complex and require mandating of standards and (b) it would be likely to involve detailed involvement by the Commissioner. In addition, the Draft

Report seems to imply that TCNZ losing control of parts of its own network would, in itself, be undesirable.[5]

Taking these points in turn, we note that at present TCNZ largely has control over technical standards. TCNZ has every incentive to make LLU appear as technically difficult and costly to achieve as possible in order to protect any excess returns earned from the local loop. Therefore, it is clearly necessary to look to international experience and independent technical expertise in assessing the technical feasibility and costs of LLU.

The issue of technical feasibility has been extensively considered in the EU and the US and ultimately found not to be an impediment to LLU. For example, in the UK, OFTEL considered a number of different technical options for LLU. Although technical problems (such as cross-talk between lines) were considered, it was decided that these could be overcome by the design of appropriate technical standards for the operation of digital subscriber lines.

As regards requiring detailed intervention by the Commissioner, here it is necessary to take the approach rightly proposed in other sections of the Draft Report of comparing LLU with alternative regulatory measures such as an obligation to wholesale access. In this regard, LLU does not appear more difficult to implement than the wholesaling of access.

LLU requires the setting of technical standards for copper or bitstream access, but this is largely a one-off task. Thereafter, an access price to copper or bitstreams needs to be set. However, this is arguably a much simpler task than regulating a wholesale price since it should be simpler to determine costs. With wholesale access, it may be necessary to allocate the costs of the local loop infrastructure between the wholesale access service, and any other service that TCNZ may continue to supply to the subscriber connected to its local access network. Because the majority of these costs are likely to be common across the wholesale service and any remaining TCNZ retail service, this cost allocation is difficult and, because of its inherent arbitrariness, likely to give rise to disputes. By contrast, with mandated LLU, only the costs of the loop would need to be determined, but not allocated to particular services.

This is particularly true of LLU giving unbundled access to copper. Setting a regulated price for access to copper loops should in fact be simpler than setting a regulated price for wholesale broadband access since there are much fewer activities involved.

Therefore, we do not consider that the Inquiry's conclusion that LLU is more intrusive than regulating wholesale access stands up to scrutiny.

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[5] See Page 43.

2.1.3. IMPLEMENTATION COSTS ARE CONSIDERABLE

Both the Ovum report and TCNZ's submission attempt to estimate the costs of implementing LLU. However, we do not consider that either approach provides a sound basis for reaching conclusions.

First, the question is not one of the absolute size of the costs of implementing LLU, but rather that of the relative size of costs and benefits. In this regard, the Ovum report is an inappropriate starting point for an analysis since it does not include the key benefits of LLU in terms of:

- greater competition, in particular in areas that will not be reached by cable build-out;
- the saving of build-out costs where such build-out is economically inefficient, but may still be profitable to cable operators because of TCNZ exercising market power and pricing;
- consequent improvements in allocative and productive efficiency; and
- stronger incentives for TCNZ to roll out and democratise broadband services.

We address this issue in detail below and identify what benefits should be taken into account.

Second, TCNZ has substantial incentives to protect supernormal profits it earns from control of the local loop from additional competition and, therefore, to ensure that the costs of LLU appear to be and perhaps even are high. TCNZ has considerable control over:

- how large these costs might actually be, since TCNZ sets technical standards and has little incentive to minimise these costs; and
- the information available to other parties that could be used to estimate these costs and challenge the figures presented by TCNZ.

It is clearly beyond the scope of this study to evaluate the TCNZ figures, but it is perhaps worth noting that the cost figures presented in the TCNZ re-evaluation of the Ovum model appear to be significantly out of line with the cost estimates used by OFTEL for handling and collocation costs.[6] OFTEL uses cost estimates of £10 million each for handling and collocation costs, giving a total of £20 million. This appears to be

[6] OFTEL, "Access to Bandwidth: - Delivering Competition for the Information Age", Statement, November 1999, Annex D.

consistent with the original Ovum cost estimates of NZ$ 88 million, but rather far away from the TNCZ estimate of NZ$ 310 million (or around £100 million).

2.1.4. ALTERNATIVE REGULATORY REGIMES CAN ACHIEVE SIMILAR RESULTS

The Draft Report considers that the wholesaling of access can achieve similar effects to LLU. It particular, it states that "*unbundling does not seem to offer significant benefits over and above those that could be achieved by requiring Telecom to wholesale its local loop*." However, we do not consider that it is correct to conclude that the impact of LLU and wholesaling access will be similar.

In particular, there are significant differences in that:

- LLU provides much stronger incentives for TCNZ to roll out xDSL, broadband and a range of competitive, innovative services than would be the case with a wholesaling obligation, or would leave decisions about roll-out of such services in the hands of other operators rather than exclusively with TCNZ;

- LLU (and particularly access to copper loops) puts stronger pressure on TCNZ to minimise the cost of providing such service than does wholesaling;

- with LLU, the pricing of broadband services is determined to a much greater extent by competition rather than regulation leading to a need for less, rather than more, regulatory intervention.

We consider these points in turn.

If TCNZ is faced by a wholesaling obligation without a complementary requirement to unbundle local loops, then this does not give good incentives for roll out of broadband services. By not upgrading particular parts of its network to offer broadband access, TCNZ can, in effect, undermine the effectiveness of the obligation.

There are indeed strong incentives for TCNZ to delay the roll-out of broadband services in its network in the absence of LLU. For example, if TCNZ offers services such as xDSL, particularly as a mass-market product, it will inevitably cannibalise supernormal returns that it earns at present from other products (e.g. ISDN and additional analogue exchange lines installed for data use). At the margin, this cannibalisation effect will mean that TCNZ will not be as aggressive in rolling out broadband access as it would be with LLU.

These effects have been notice in practice. For example, LLU is considered to be important in ensuring adequate roll-out incentives in Australia:

> *"In the ACCC's view, without local loop unbundling ..it is unlikely that such broadband services would have been made available on a reasonable commercial basis. Competitors would be overly dependent on Telstra's choice of technologies, platforms, service processes and timing"7*

Furthermore, the Inquiry has acknowledged that an entrant might require wholesale broadband services from TCNZ in particular geographical areas in order to supplement its own infrastructure and facilitate entry. In such cases, TCNZ may have a specific incentive not to roll out broadband services in such areas (or to particular customer groups) in order to frustrate such an entry strategy.

These incentives would fundamentally change with LLU. If TCNZ holds back in offering broadband services, then competitors have the ability to obtain unbundled local loop access and install their own equipment in order to offer such services. This removes the ability of TCNZ to hold back its broadband roll-out in order to protect existing revenues and raise the costs faced by new entrants building out their own infrastructure.

Taking the second point, if TCNZ is only required to offer wholesale services, there may be little competitive pressure to minimise the costs of providing broadband services. If TCNZ uses an inefficient means of delivering services, it can nevertheless recover its costs through the wholesale access charge. Unless there is tough regulation that allows TCNZ to be compensated only for efficiently incurred costs, incentives to innovate in how services are delivered will be weak. This point is implicit in the Ovum analysis that assumes that loss of incumbent market share leads to greater pressure for efficiency.

In contrast, with LLU there can be competition over the technology used to deliver services. If TCNZ it not efficient in delivering broadband services and in innovating on price and services, it would be replaced by more efficient alternative operators with access to the copper loop.

This links to the third point – that the proportion of TCNZ's cost base subject to regulation is dramatically reduced by LLU. In particular, with LLU it is only necessary to regulate the pricing of copper or bitstream access (which is relatively simple) as opposed to an entire wholesale broadband product (as we have discussed above).

We should perhaps point out that these arguments should not be misinterpreted as suggesting that LLU is better in every regard than wholesale access, and that therefore the case for wholesale access would disappear if the Inquiry decided to mandate LLU. Wholesale access may be available much more easily and within a shorter timeframe than LLU, and might therefore bring substantial benefits in terms of speeding up the

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[7] ACCC, "ACCC Opens up Telstra's network: lower prices and new high speed services", Press Release, 22 July 1998.

introduction in the development of broadband services and the introduction of competition. As noted above, LLU removes some of the problems associated with wholesale access, in particular the incentives faced by TCNZ to slow down the roll-out of xDSL services, and should therefore be regarded as a complement to, rather than as a substitute for wholesale access.

3. ESTIMATING COSTS AND BENEFITS OF LLU

In this section we consider how, in principle, the costs and benefits of LLU could be assessed and what data would be required to make such an assessment. In particular, we consider how allocative efficiency benefits that are not included by Ovum should be introduced into the analysis.

3.1. THE BENEFITS OF LLU

The key benefits of LLU are as follows:[8]

1. *Lower prices for broadband access*

   LLU increases competition in the provision of all substitute services and should lead to lower prices relative to a situation in which TCNZ faces only wholesaling obligations.

   The re-estimation of the Ovum model in TCNZ's submission has claimed that retail prices for access are below their long-run efficient levels and, therefore, there is no welfare benefits from lower prices.[9] However, if this were correct, it would mean TCNZ setting a retail price for *broadband* access below cost. Regardless of the position of any access deficit with respect to standard voice services, such a charging structure for broadband services seems highly implausible. Overall, we can see no reason to expect wholesale broadband access to be priced *below* efficient levels.

   Lower prices give rise to a gain in consumer surplus, but lower profits for TCNZ. The welfare gain due to improved efficiency is equal to:

   - the gain in consumers' surplus;
   - less any loss of profits to TCNZ from lower margins;

[8] It is worth noting that the general headings for the discussion of benefits in Annex 4 of the most recent OFTEL management plan broadly coincide with these categories. (OFTEL, "Proposals for implementiong OFTEL's Strategy: 2000/01 Management Plan", Statement, April 2000**)** OFTEL lists benefits under the following headings:

- Lower prices or greater output or both.
- Greater efficiency.
- Greater variety of services and functionality.
- Improvements in quality of service for a given price.
- Lower costs of compliance.

[9] See the section headed "Allocative Efficiency" in the Telecom New Zealand submission of 7 June.

- plus any additional profits earned by other operators using unbundled local loops.

In order to estimate the gain in consumer surplus as a result of LLU, it is necessary to know:

- TCNZ's roll out plans for broadband services in the absence of LLU over a reasonable horizon, including the numbers and types of customers by geographical area;
- estimates of take-up of broadband access in the base case of no LLU;
- whether there are competing alternative local loops (by geographical area);
- some estimate of the price elasticity of the take-up of broadband services;
- some estimate of the reduction in TCNZ's margins that might result from LLU.

In order to estimate the impact on TCNZ's margins of LLU, it is necessary to have information about the forecast profitability of TCNZ's broadband services. We would anticipate that this information is available in TCNZ's investment plans. Then, it would be reasonable to consider a number of scenarios in which TCNZ's margins on broadband services are eroded. The Analysys cost benefit study of LLU in the UK for Oftel used this approach, estimating the allocative efficiency gains from a reduction in price on the basis of assumed price elasticities of demand and expected reductions in price as a result of more intense competition.[10]

The corresponding change in prices of wholesale services and the resultant effect on demand could then be used in order to estimate allocative efficiency benefits. This information would also be sufficient to estimate any loss of profit to TCNZ resulting from LLU and any gain in profit to entrants using TCNZ's local loops.

In general terms, it is extremely difficult to produce any actual detailed estimate of allocative efficiency gains without some indication of TCNZ's plans for broadband roll-out in the absence of LLU and what margins are expected on these services. To date, such data is not available to third parties.

[10] We should note that our agreement with this particular element of the Analysys approach should not be taken as an endorsement of the assumptions made by Analysys, and consequently the results presented.

2. *Greater roll-out*

In addition to lower prices for broadband services, LLU is also likely to affect the availability of xDSL services. As discussed early, LLU should incentivise TCNZ to roll-out broadband services more rapidly that would otherwise be the case.

It is possible to estimate the benefit from broadband services being made available to a typical customer. This is equal to the total consumer surplus generated, less the costs of supplying this service.[11] Again, some estimate of price elasticity is necessary to estimate this benefit.

To calculate the social benefit of rolling-out broadband access to a particular geographical area, it is necessary to forecast likely take-up rates. The expected benefit is computed by multiplying the number of customers in the region, the forecast take-up rate and the benefit per customer.

In general, the benefit of additional roll-out can be larger than that of lower prices. Lower prices add marginal users of broadband services, whereas additional roll-out can bring services to customers who value those services significantly in excess of the price of obtaining them, and so enjoy a large gain in consumer surplus.

Whilst this procedure allows a given change in roll-out plans to be valued, it is more difficult to estimate what the effect of LLU would be on those roll-out plans. At least in principle, sufficiently detailed information about TCNZ's margins by geographical area would allow a model of TCNZ's roll-out decisions to be constructed. In particular, in the absence of LLU, TCNZ would build out where revenues from broadband service exceed the costs of providing them, less any lost profit margins on services that would be cannibalised.

In the case of LLU, the incentives are somewhat different. In particular, TCNZ would lose customers to alternative providers if it does not offer broadband services and, with them, any profits that those customers currently generate. TCNZ should then build out where revenues from broadband service exceed the costs of providing them.

In principle, with sufficiently geographically disaggregrated data it is possible to estimate where TCNZ has an incentive to offer broadband services with and without LLU. This would need to include:

- costs of providing xDSL;

[11] See the description of Hausman's approach to calculating the benefits of previously unavailable services being made available in our previous paper.

- margins on existing services provided to likely adopters of broadband services; and

- forecast revenues from broadband services.

In the absence of such data, it is extremely difficult to produce a systematic estimate of how TCNZ's roll-out plans would be affected by LLU.

3. *Productive efficiency gains*

The Ovum report has considered the issue of how increased competition could force greater efficiency from TCNZ. In particular, cost savings are related to loss of market share through the "competitive benefit ratio". As our previous report details, this approach is fraught with problems.

In general, we would expect LLU to put pressure on the costs of providing broadband services since a greater range of activities are subject to competitive pressure. However, estimating an overall benefit from LLU requires an assessment of (a) forecast take-up of broadband services and (b) the likely impact on cost of greater competition due to LLU in areas where there is not existing local loop competition. In this regard, simple cost reduction scenarios may be more reliable that Ovum's competitive benefit ratio approach.

Given sufficient time and data, there is no reason in principle why TCNZ's efficiency could not be benchmarked by comparing it with international best practice. This would provide an estimate of the potential efficiency gains additional competition could provide.

Overall we would expect this benefit under this heading to be smaller in magnitude than the benefits identified under (1) and (2) above.

4. *Dynamic efficiency gains*

In the long-run, LLU may encourage innovation in the types of broadband services available. This increases consumer welfare by extending choice and making available new services. In general, dynamic efficiency gains (though difficult to quantify) are likely to exceed the gains from improved allocative or productive efficiency. In particular access to copper may encourage innovation in the technology used to deliver broadband service over existing local loops. This may yield substantial welfare benefits, but these are necessarily difficult to judge. We would not advocate estimation of such benefits, but rather note that if identified costs and benefits were otherwise equal there would be a case for concluding in favour of LLU since dynamic efficiency benefits had not been included.

Our first paper has discussed in detail that the benefits arising from making an entirely new service available are likely to be very much greater (by an order of magnitude) than the benefits from extending the supply of given services. Therefore, it is clear that any estimation of benefits ignoring innovation is likely to lead to a significant under-estimation of total benefits.

3.2. THE COSTS OF LLU

The costs of LLU primarily relate to:

- the one-off costs of implementing procedures and standards for LLU;
- ongoing physical costs of unbundling, including loss of scale economies from separate operation of exchange equipment by two or more providers.

There are incremental set-up costs incurred for the installation of access control equipment of competitors in TCNZs exchanges, and on-going costs related to maintenance and supervision. In addition, there may be a need for additional connection links and switching, giving rise to handling costs. It is primarily an engineering issue to estimate these.

These costs may indeed be substantial. However, they depend to a large extent on the technical standards and procedures agreed for LLU. The incumbent will have little incentive to adopt standards that minimise these costs, and cost estimates provided by TCNZ should therefore be regarded with caution.

Moreover, these additional costs will partly be offset by cost savings enjoyed by TCNZ. For example, equipment provided by other operators will replace TCNZ equipment and thus result in cost savings. Thus, collocation costs should only include the incremental costs incurred as a result of replacing TCNZ equipment with equipment provided by other operators. However, this will lead to some loss of scale economies, since collocated equipment will not all be owned or operated by the same party.

Some possible categories of "costs" we do not consider appropriate to include:

- As discussed in section 2, we do not consider that there is any case that overall regulatory costs would be higher with LLU than without.
- Even if LLU leads to reduced investment in alternative local loop infrastructure, it is not appropriate to include this as a cost, since such investment may be inefficiently incurred in the base case of no LLU.

3.3. TCNZ'S RE-ESTIMATION OF THE OVUM MODEL

Telecom New Zealand has presented a re-estimation of the Ovum model that concludes that mandated LLU would impose a net economic cost of $755m for copper access and $673m for bitstream access. This is in contrast with the original Ovum model that found costs and benefits generally similar.

TCNZ states the Ovum model tends to overstate benefits and understate costs. We consider that this conclusion is entirely incorrect. The approach taken by Ovum is seriously biased against LLU since it simply does not include the major sources of benefit. The TCNZ modifications are subject to a similar failing as it closely follows the same approach.

The key modifications made by TCNZ are to:

- re-estimate the costs of unbundling using its own data on the New Zealand network. This increased Ovum's initial cost estimate of $88m to $310m. This is almost a fourfold increase in the costs of LLU, and

- increase the proportion of the market subject to competition in the local loop and, thereby, reduce the benefit of LLU. This is primarily in response to Saturn's announcement of an increased rollout estimate.

It should not come as a surprise that TCNZ estimates the cost of implementing LLU to be significantly higher (more than four times) than the estimate provided in the Ovum report, since TCNZ has strong incentives to protect its position with regard to the local loop. However, the scale of the adjustments suggested by TCNZ raise serious questions about the reliability of TCNZ data unless this is subject to independent scrutiny.

4. APPROPRIATE EVIDENTIAL REQUIREMENTS

Given the above discussion, it should be apparent that undertaking a comprehensive cost-benefit analysis is a far from easy task. In particular, those seeking LLU are in a disadvantaged position because most of the information required to present a conclusive case is in the hands of the incumbent, who has little or no incentive to make this data available or support any effort to show that LLU would overall be beneficial.

Therefore, it would appear that the overall approach taken by the Inquiry – that new competitors asking for LLU to be mandated have to prove that such a move would overall be beneficial – is likely to generate a considerable bias against LLU. An alternative solution would be to start from a presumption that LLU is likely to be overall beneficial, and require TCNZ to provide conclusive proof that such a policy would ultimately lead to welfare losses in New Zealand.

Apart from providing better incentives for TCNZ to disclose information in its possession relevant to the issue at hand, such a solution would appear to be in line with the approach towards LLU adopted in other jurisdictions. The case for LLU has been made in many countries, and LLU has been mandated in many jurisdictions.

The European Commission recently has proposed a Regulation[12] that requires all Member States to achieve LLU by the end of this year, bringing significantly forward the date by which this measure has to be implemented. Given that only in April this year the Commission has adopted a Recommendation for LLU, this move suggests that the implementation of LLU was considered to be too important and urgent to rely on non-binding measures. In the press release accompanying the proposed Regulation, the Commission noted that "*local loop unbundling is the key to the break-through of high-speed Internet in Europe and requires strong and urgent measures.*"[13] The key provisions in the proposed regulation are that:

- incumbent operators have to provide competitors with full and shared unbundled access to their copper loop on fair, reasonable and non-discriminatory terms;
- physical access must be granted at any technically feasible point, and competitors must be allowed to collocate their equipment;

[12] Unlike a Directive, which has to be transposed into national law, a Regulation is immediately binding for all Member States.

[13] "Commission proposes unbundling local loop by end of year", IP/00/750, Brussels, 12 July 2000.

- prices for LLU have to be cost-oriented as long as competition is not sufficiently strong to prevent excessive prices; and
- operators must publish a reference offer for unbundled local loop access.

Circumstances in New Zealand, where the incumbent is lightly regulated on price by international standards means that any case for LLU should be stronger than in the EU and the US, where it is already mandated. For example,

- there is little or no infrastructure competition at present;
- the population distribution and the relative lack of densely populated urban areas makes the roll-out of alternative infrastructure very expensive, and may to a large extent be driven by inflated and excessive prices of substitute services;[14]
- a relatively high proportion of copper in TCNZ's network would make LLU relatively easy to implement.

All of these factors would suggest that the case for LLU should be even stronger in New Zealand than in other jurisdictions. This should be sufficient to create a *prima facie* presumption that LLU is overall beneficial, and that the case against LLU should be proven by those seeking to prevent LLU being mandated, in particular where the sources of benefits are self-evident, but their size is difficult to measure.

[14] It is perhaps worth reiterating that proposed roll-out plans should not be taken as unambiguous evidence that LLU is unnecessary. On the contrary, such plans may be an indicator of excessive pricing by the incumbent PTO, and lead to a wasteful duplication of fixed costs that LLU could help to avoid.