PANEL SESSION 1

Invited paper 3

Telecommunications service and access pricing

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A key feature of the new telecommunications regime is that industry participants can gain access to certain 'declared' services of other participants as a way of providing components of the final package of services they offer their customers.

In this way, the access seekers can compete with the access providers in offering final services to customers, but without having to build all of the facilities themselves. The idea is that this will promote competition in the final service markets, while still allowing for economies of scale and scope that might be lost if the declared facilities were duplicated.

Obviously, a key policy challenge is to get the terms of access right. If the access price is too high, it may deter the socially desirable entry of access seekers, or it may encourage them into socially wasteful duplication. If the access price is too low, it could deter the efficient entry of access providers, or lead to insolvency of the current providers.

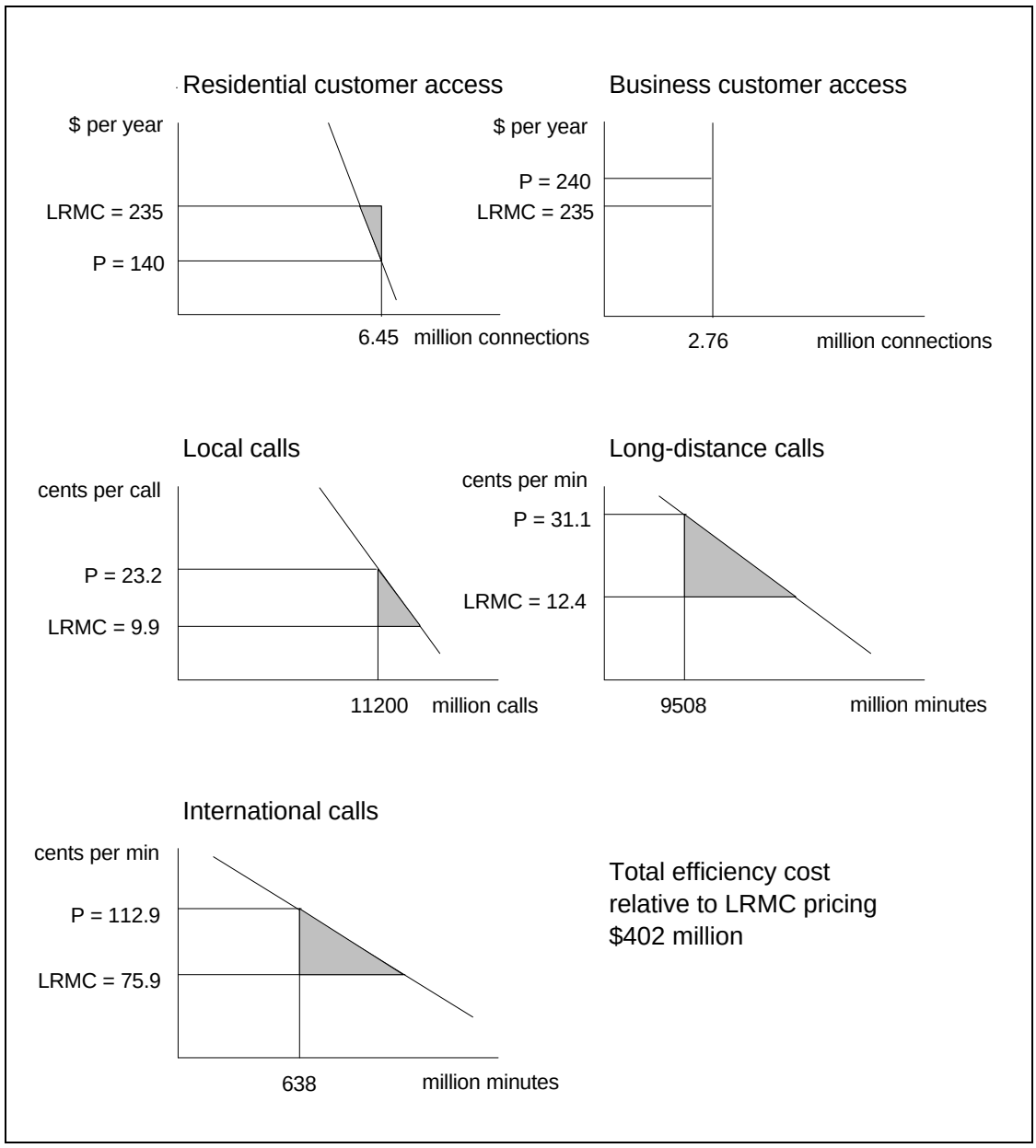
But lest it be thought that the access price is a means of solving all of the problems of the industry, the issue needs to be put in a broader context. In particular, it needs to be set against developments in the pricing of final services. And this in turn raises a second policy issue under the new telecommunications regime — the role of price cap regulation in governing the prices of final services.

Let us consider the situation in final service markets at the moment. We need to consider not just prices, but prices relative to costs. The analysis is drawn from Industry Commission (1997a).

Figure 3.1 shows estimates of Telstra's long run marginal costs of providing the key basic telecommunications services. These costs include operating costs, depreciation and a return on the capital used to provide the service.

So the estimate of the cost of subscriber access to the network — the resource cost of providing you and I with a copper wire connection from the local exchange to our house, the thing we pay a monthly rental for — covers the operating cost, maintenance and return on the capital used to provide the subscriber access. In technical terms, this part of the network is called the *customer access network*, or CAN. A key feature of these costs is that they do not vary with the traffic through them. They are measured here in dollars per subscriber per year, irrespective of traffic.

Figure 3.1: Pricing of Telstra services 1995–96



The estimate of the costs of local calls covers the operating and capital costs of the dedicated equipment used for the switching and inter-exchange carriage of local calls. In technical terms, this part of the network is called the *local exchange network*, or LEN. The cost of local calls shown in figure 3.1 has been estimated by the average operating and capital cost of the LEN, expressed in cents per call.

Now the CAN and the LEN do not just provide local calls. They are also used to reticulate higher level calls — long distance and international calls. This is a

key access issue. Service providers such as AAPT want to offer cheap long distance and international calls, and may be willing to establish their own switching and long distance transmission facilities to do so. But they do not necessarily want to duplicate Telstra's or Optus's local switching and transmission equipment — the dreaded black or grey overhead cables. They may prefer to use Telstra's or Optus's facilities to complete this part of their higher level calls. I will return to this issue later.

The estimated cost of long distance calls includes the operating and capital costs of the LEN that is used at each end of the long distance call, plus the operating and capital costs of the switching and transmission facilities used to carry long distance calls between local exchange areas, all expressed in cents per minute of long distance call. The cost does not include any CAN costs, because CAN costs are not traffic-sensitive.

The long distance network is used not just for long distance calls. It is also used to reticulate international calls — those that originate or terminate outside of Sydney and Melbourne where Australia's international gateways are. This raises a second access issue. Up till now, for various reasons, competition for international calls has been concentrated in major metropolitan centres. But as competition spreads to remote regional centres (such as Canberra), new providers may not want to establish their own long-distance switching and transmission capacity to bring outgoing calls to an international gateway. They may prefer to access the facilities of existing carriers instead.

The estimated cost of an outgoing international call includes the operating and capital costs of the domestic and possibly the long distance components required to get the call to the international gateway. It also includes the cost of using the international gateway switch. It includes the transmission cost of taking the call from the gateway to a notional mid-point, half of the way towards the foreign international gateway at the other end. The remarkable thing is that these days, the cost per minute of this international leg is less that a quarter of the total cost so far, and the total cost so far is only 11 cents a minute.

What takes the cost up so dramatically thereafter is that Australian carriers need to make grossly inflated payments to foreign carriers to take the call from the notional mid-point through to termination. We estimate that these costs are 65 cents a minute on average. Industry Commission (1997b) looks at this payment further, and questions whether it is really going to be an impediment to getting cheaper international phone calls in the near future.

Now these cost estimates are nothing more than that — estimates. They have been cobbled together from patchy data in annual reports and AUSTEL publications and guesstimates from industry analysts, because a lot of the data

are not publicly available. Even traffic data have not been published recently. Insiders could undoubtedly shoot holes in these estimates. But we think they give a reasonably good indication of orders of magnitude involved.

These service cost estimates do not cover all of Telstra's costs. They exclude what are known as common costs — an important one is billing costs — that are shared across a number of services. They also exclude corporate overheads. And they exclude a contribution to corporate profits.

So one of the dilemmas in public utility pricing is that if Telstra were to price its final services at long-run marginal cost — normally the preferred benchmark of economists from an efficiency point of view — it would not cover all its costs. It would eventually go out of business.

The policy question is whether there is a way of pricing final services that will also recover common and overhead costs and make a contribution to profit, while doing minimal damage in terms of efficiency. Let us see how Telstra is doing at the moment.

Figure 3.1 also shows Telstra's current prices for final services, relative to long run marginal costs.

Notice that prices for most services are above marginal cost, particularly for long distance calls. Remember that the price of international calls is also far above the real resource cost of making the calls, but Telstra's costs have been inflated by the payments it needs to make to foreign carriers.

Notice too that the price of residential subscriber access is below long run marginal cost. This is the so-called CAN deficit that has been talked about in the context of access pricing.

The shaded areas indicate the efficiency losses associated with the current pricing structure. They amount to about $400 million per year.

The question is whether they can be reduced.

Currently, the efficiency loss in the long distance market is relatively high, for example, while that in the subscriber access market is fairly small. The high efficiency losses occur in markets where demand is relatively price responsive. The low efficiency losses occur in markets where demand is not price responsive. The slopes of the curves have been drawn in accordance with available estimates of the relative price sensitivities.

This means that if prices in the high-loss markets could be dropped a bit, and those in the low-loss markets raised a bit, the same total costs could be covered with lower total efficiency loss.

At the extreme, since business subscriber access has been estimated to be completely unresponsive to price, this market could be used to recover all the common and overhead costs, allowing all other services to be priced at long run marginal cost.

Figure 3.2 shows that business subscriber access would need to rise to just under $1300 per connection per year.

The efficiency losses would be reduced to zero. And so would the CAN deficit.

Obviously, a key question is whether business subscriber access would stay completely unresponsive in the face of such a price hike.

Figure 3.3 shows the situation when business subscriber access is capped at a more realistic $350 a year.

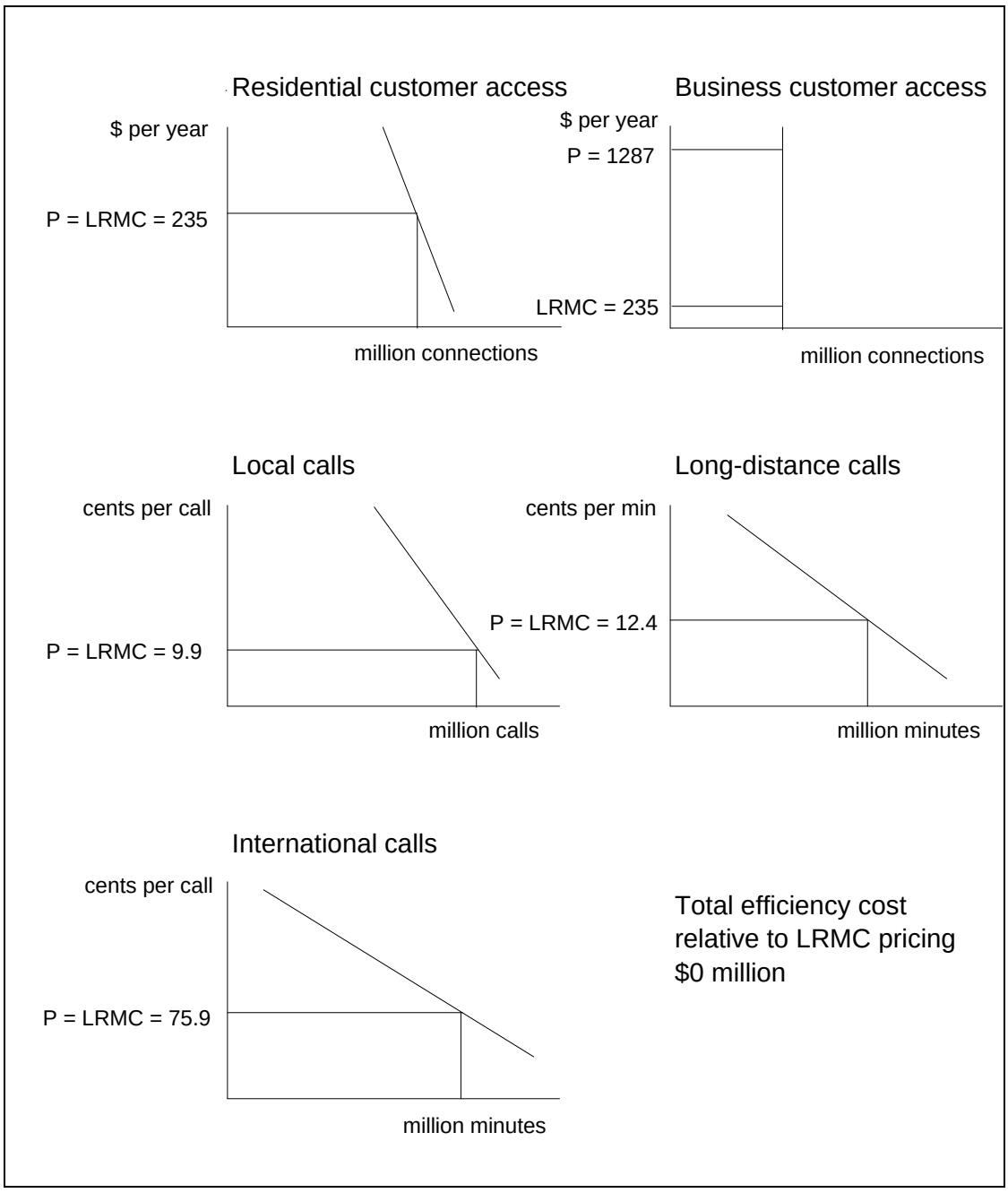
It also recognises two additional constraints that currently apply to Telstra's pricing options. Telstra has been subject to price cap regulation. This is designed to guard against it exploiting its market power to increase profits. The price rebalancing shown so far has kept profits constant, so would not have violated an average price cap. However, Telstra is also subject to price sub-caps that constrain the prices of some individual services. In particular, sub-caps currently prevent increases in residential subscriber charges. They also prevent increases in the price of local calls.

So figure 3.3 shows the best that could be done with business subscriber access at $350, and residential and local call prices where they are currently. Efficiency losses could still be lower than the $400 million currently. But they would still be sizeable, at about $260 million.

They could be reduced even more by relaxing the price sub-cap on residential subscriber access, at least to the point where this was priced to cover long run marginal cost (figure 3.4). The efficiency loss could thereby be reduced to about $100 million — fully $300 million less than is now. All this would require would be a modest increase of about $100 a year in residential and business access charges, allowing reductions in the prices of local and long distance calls.

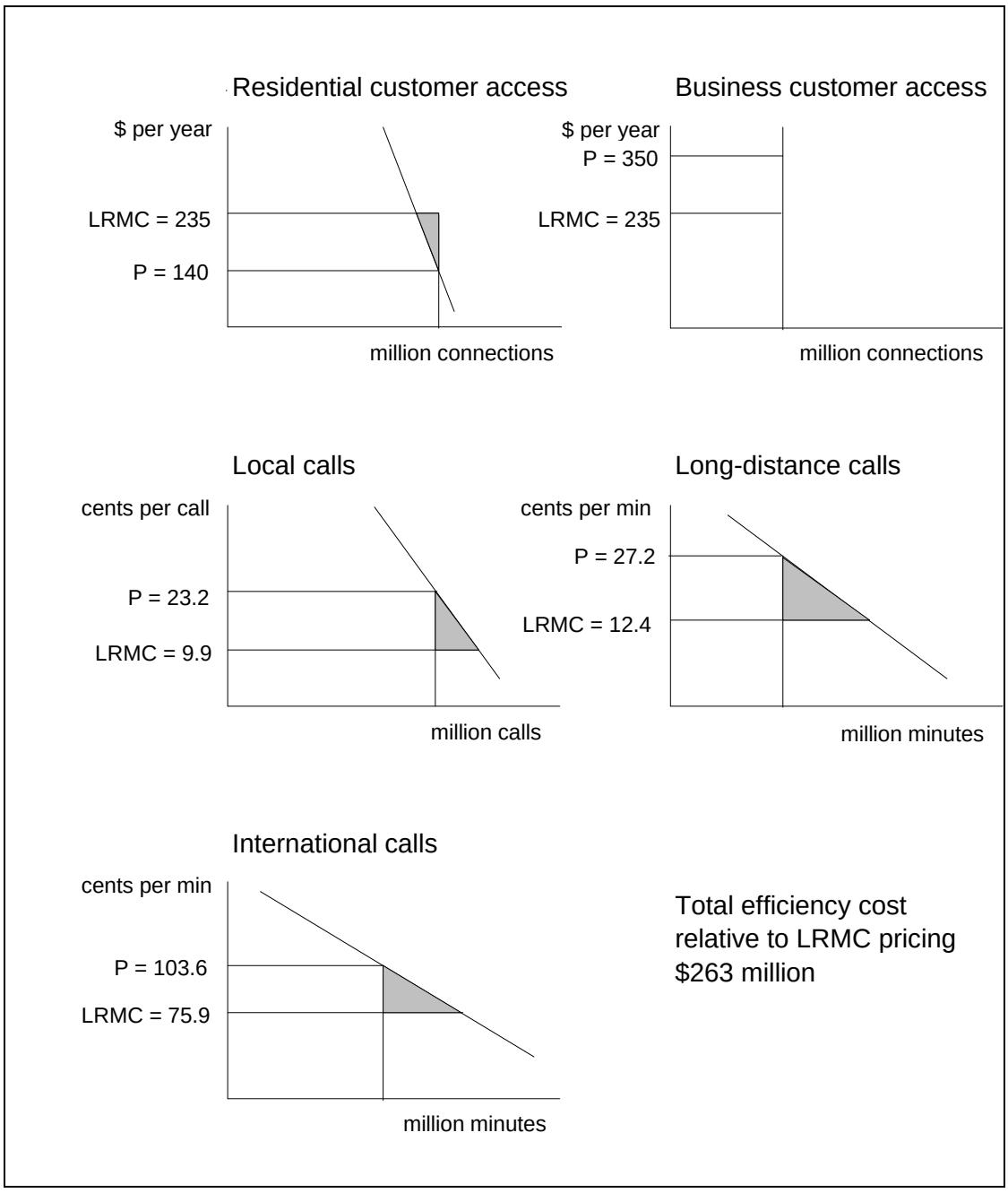
The analysis in Industry Commission (1997a) shows that also relaxing the price sub-cap on local calls could reduce the efficiency losses further, but not by very much at all.

Figure 3.2: Efficient price rebalancing



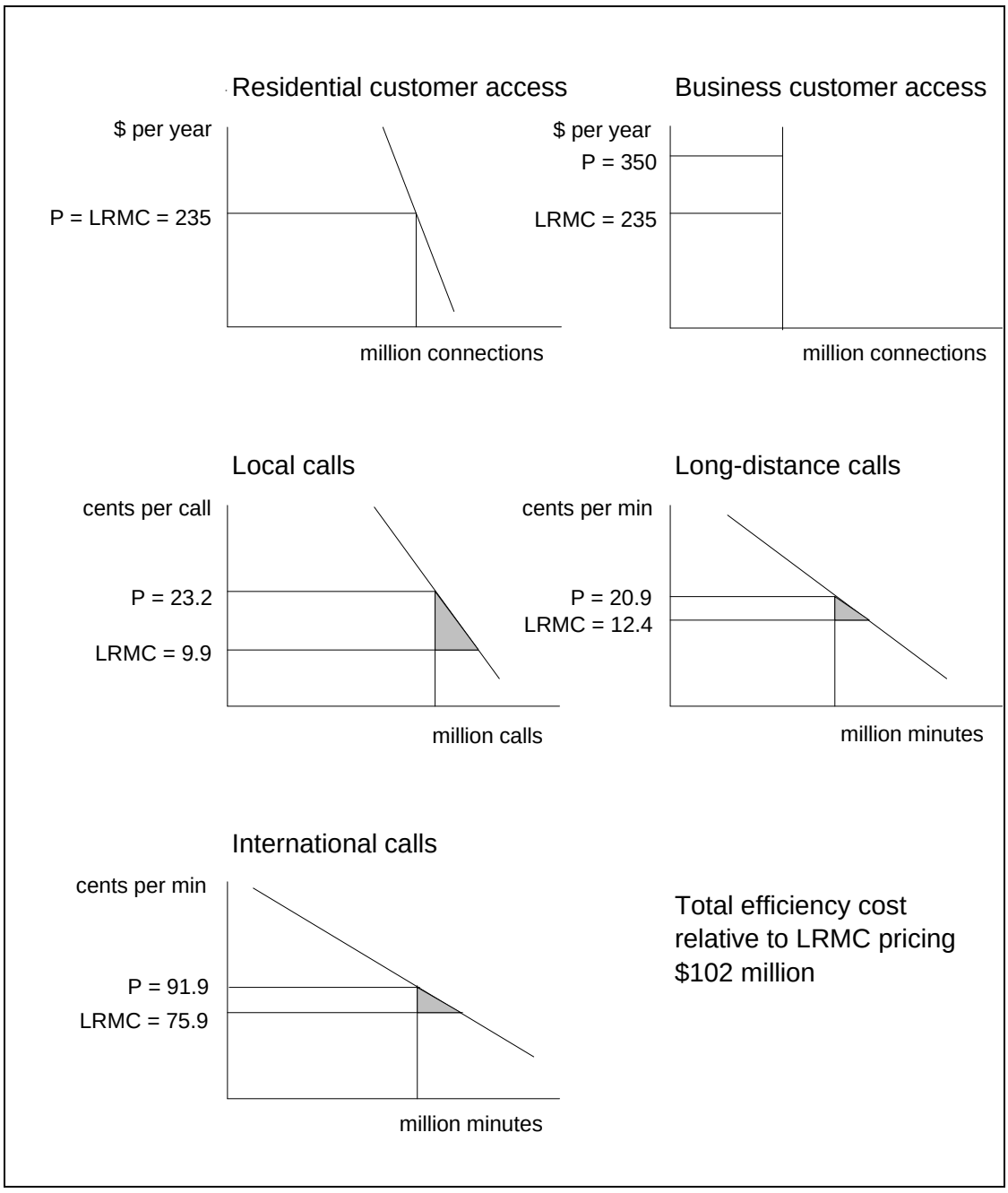
This analysis shows that if the price cap on residential subscriber access were removed, Telstra could adjust its prices to recover its common and overhead costs from final service customers in a relatively efficient fashion. It would not face a CAN deficit. And the cost in terms of efficiency could be considerably lower than currently.

Figure 3.3: Rebalancing within price caps



Thus the price sub-cap on residential access imposes a significant efficiency cost. It prevents Telstra from adopting a more efficient pricing structure, one that would be good for profits, and (according to Baumol, Bailey and Willig 1977) would also be likely to protect it — and us — from inefficient entry.

Figure 3.4: Relaxing the resident ial sub-cap



The analysis also shows one of the reasons why it would not be a good idea to allow the price of service provider access to the local network to include a contribution to common costs, including CAN costs. This would simply distract attention from more efficient ways of recovering those costs, and cement in place the inefficiencies in final service prices imposed under the current price cap regime.

The second reason is that it is in any event better to recover common and overhead costs from final customers rather than service seekers. Diamond and Mirrlees (1971) long ago pointed out that any pricing or taxing regime that distorted both producer and consumer decisions would be worse than one which raised the same amount of revenue, but distorted consumer decisions only. Thus the production decisions of access seekers are best left undistorted by allowing them access to inputs in the form of the services of existing infrastructure at long run marginal cost. The concept is essentially the same as the total service long run incremental cost (TSLRIC) benchmark the Australian Competition and Consumer Commission (ACCC) has adopted, but in its pure form, without the inclusion of common costs.

Of course, some may argue that the conditions required by the Diamond and Mirrlees result do not hold in telecommunications. In particular, the result requires there to be no excessive or 'pure' profits. But if there are pure profits in telecommunications, they would be being reaped in final service markets. In these circumstances, the pricing analysis of Bös (1985) suggests that it is optimal to price up on access if access is a substitute for the service generating the profits, and to price down on access if it is a complement to the service generating the profits. Now the ultimate complementary relationship is one between an intermediate input — the service for which access is sought — and an output — the final services delivered to subscribers. So even here, the analysis suggests that it is appropriate to price down on access.

The ACCC has recently released a determination setting the price of access over a transitional phase to the end of 1997. The price of access to the local network for reticulation of calls in capital cities (through Telstra's National Access product) has been set at 2.84 cents per minute in peak periods and 1.34 cents per minute in off-peak periods. This is the price of comparable CBD and metropolitan access under the current Telstra–Optus agreement.

The ACCC's method of arriving at the figures was understandable, given its time constraints and limited access to cost information. The difficulty is that, as far as can be determined, the current Telstra–Optus access price is above long run marginal cost (Industry Commission 1997a, p.115). Thus, ideally, access prices after the transition period should be even lower. The Commission's analysis suggests an average price of 2.5 cents a minute across both metropolitan and regional areas would be closer to the mark.

The access regime does not guarantee this outcome. If access arrangements can be negotiated between seekers and providers on a mutually satisfactory basis, they need not come to the notice of the ACCC at all. It remains an open question whether this negotiated approach can deliver the sort of access price

for telecommunications that has been argued for here — one based on TSLRIC in its purest form.

References

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