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# Competitive safeguards in telecommunications

A submission in response to “Beyond the Duopoly”



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# 1 Introduction

In May 1994 the Government announced an internal government review of post-1997 telecommunications policy and regulation. The review reflects the Government's commitment to full and open competition after the sunset date of 30 June 1997 for the duopoly. In September 1994 the Minister for Communications and the Arts released for comment an issues paper entitled *Beyond the Duopoly - Australian Telecommunications Policy and Regulation*.

The Office of Regulation Review (ORR) is responsible for advising on the Commonwealth Government's regulation review program. Amongst other functions, the ORR provides public advice on regulatory issues.

In this submission the ORR comments primarily on the competition policy issues raised in Chapter Six of *Beyond the Duopoly*. The ORR has encountered these issues in broad terms in its work on pro-competitive regulation and, more recently, in its work on price surveillance. Competition policy is thus where the ORR is best placed to contribute to the review even though it recognises that this is only one of the wide range of important issues facing the review.

At the broadest level, a common theme emerging from the ORR's previous work is the difficulty of designing regulatory regimes for industries undergoing rapid technological change. Developments in such industries often outpace or undermine attempts to implement particular government priorities through regulation. On the other hand, and more positively, rapid change can mean that what were once problems requiring a regulatory solution— for instance a firm possessing market power — may disappear as new products or processes come on stream.

In this environment, regulatory regimes should ideally exhibit two features. Firstly, they should not themselves impose a constraint on potential diversity during the early stages in the development of the industry. Problems caused by rapidly changing industries are often minor compared to the benefits they bring. Secondly, regulations should not continue to operate if the problem they were designed to overcome is eliminated by technical change. Ideally regulatory regimes should operate like self-dissolving medical sutures— disappearing when there is no longer a need for them. In practice, this points to the need for regular reviews of regulation, and including 'trigger' mechanisms in regulations so that they only apply if a problem arises.

Bearing these considerations in mind, the ORR recognises that there is a role for regulation to promote competition within the telecommunications industry. In a fully deregulated market, natural monopolies may prevent some sectors of the market being characterised by fully effective competition. For instance, elements of the basic network are likely to be supplied by only one firm, at least in the short and medium term. This submission focuses on this issue.

That said, the submission does not attempt to assess where market power is likely to be a problem. Rather it suggests how to identify market power in telecommunications, and what regulation may be necessary to prevent the abuse of that power. Specifically, the submission addresses:

- the relevance of market dominance and dominant carrier regulation post 1997;
- whether price control is necessary for final products in markets where a carrier is dominant;
- the role of price monitoring in markets with few participants;
- pricing of access to the network; and
- the choice between general or specific regulation.

## **2 Market dominance — What constitutes market power in telecommunications?**

Dominant carrier regulation is central to the current arrangements for handling market power and anti-competitive conduct in telecommunications. As defined in the *Telecommunications Act 1991*, a dominant carrier cannot price discriminate between acquirers of telecommunications services where such discrimination is anti-competitive. In markets where Telstra is dominant, it is also subject to price caps under the *Australian and Overseas Telecommunications Corporation Act 1991*.

*The issues paper asks whether, prima facie, dominant carrier regulation would be appropriate, and whether conduct regulation should apply solely to the dominant carrier in the market.* It notes that there have been some administrative difficulties associated with the use of the ‘dominant carrier concept’, particularly in identifying the relevant market concerned and whether a particular player is dominant in it.

Unless there is effective competition across the spectrum of telecommunications services after 1997, a framework for handling misuse of market power will be necessary. Market dominance retains relevance as part of this framework.

Under current arrangements dominance is defined by section 28 of the *Telecommunications Act 1991*. The section states that a carrier is taken to be in a position to dominate a market, if it would be so taken under section 50 of the *Trade Practices Act (TPA) 1974*, before it was amended in 1992. As it stood, the section prohibited mergers and acquisitions which were likely to result in dominance of a market<sup>1</sup>. AUSTEL naturally draws heavily on case law under the TPA to define dominance.

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<sup>1</sup> The 1992 amendment changed the merger ‘test’ from *dominance* of a market to *substantial lessening of competition*.

There are two key issues in defining what constitutes a dominant carrier. Firstly, how to define the relevant market and, secondly, what criteria should be used to determine whether a carrier exercises dominance in that market.

The Industry Commission (the Commission) has recently addressed these issues in its information paper *“What future for price surveillance? A submission to the Prices Surveillance Authority’s review of declarations under the Prices Surveillance Act 1983” (IC 1994a)*. AUSTEL's views on dominance are contained in its 1993 discussion paper *“Market Dominance Guidelines - AUSTEL’s approach to determining issues of market dominance in telecommunications”*.

## **2.1 Defining the market**

How the boundaries of a market are defined can have a significant influence on whether a participant is dominant in that market. AUSTEL identifies the key principle for defining a market as that of substitution. This is also the approach taken in the TPA. Under the TPA, a market is defined to be ‘a market for those goods or services which are substitutable or otherwise competitive with, the first mentioned goods or services’(s4E). Using this criterion, markets can either be defined on a service basis, geographical basis, or both.

The ORR accepts substitutability as the key determinant of a market. An example illustrates the effect this could have on determining where market boundaries lie. If, as some commentators argue, local calls made by mobile phones will one day compete directly with local calls made via the network (ie they are substitutable for fixed line local calls), it is appropriate to assume there is one market for phone calls, not a mobiles market and fixed line market.

The ORR also considers that, in telecommunications, both service and geographical factors will be relevant. For instance, because of geography, size, and caller profile, long distance calls emanating from Sydney would be perceived as a different market to long distance calls emanating from Broken Hill. Importantly for competition policy purposes, the availability of substitutes in each centre may also differ. This distinction is relevant to determining the existence of market power and any response to it. For instance, Optus may provide a ready substitute in city areas but not operate in some country areas. Thus, based on substitution possibilities, as well as other criteria, these would be different markets.

## **2.2 Criteria for determining market dominance**

The aim of testing for market dominance is to identify where effective competition is likely to be absent. The TPA does not provide criteria as to what constitutes dominance in a market. AUSTEL, relying on cases brought under the TPA, uses five

criteria:

- the degree of market concentration and the market shares of firms;
- the power to act independently;
- the height of barriers to entry;
- product differentiation and sales promotion; and
- the nature of corporate relationships.

AUSTEL ascribes a high weighting to the first two criteria, a medium weighting to the third and a low weighting to the last two (AUSTEL 1993b, pp 38-53). The ORR considers that each of these factors *could* be important for determining dominance but that they do not provide clear rules as to what actually constitutes dominance. Although AUSTEL ranks the criteria in order of importance, its approach does not identify objective thresholds for each criterion to indicate if a carrier was dominant. Such tests are not contained within the TPA and have not been established by precedent. For example, taking the two most important criteria, it is not clear how much market share constitutes dominance, and the power to act independently is a definition of market power, rather than a test that can be usefully applied. Hence, in applying the criteria, significant judgement and discretion is exercised by AUSTEL.

The ORR suggests that in considering arrangements post 1997 it is desirable, as far as possible, to minimise the need for judgement or discretion by the regulator. Clear thresholds and rules would provide certainty to participants in the market and could reduce administrative costs. Such an approach has been adopted by the Trade Practices Commission (TPC) in its draft merger guidelines.

The TPC's merger guidelines reveal what factors will be taken into account at which stage of the process, and how they will be weighed against each other. An important advantage of the guidelines is that their sequential nature allows mergers of no interest to the TPC to be identified at an early stage of analysis, and thus the investigation may be discontinued before complex issues such as entry barriers need to be considered. (IC 1994b, p.76)

In examining whether products should be examined by the Prices Surveillance Authority (PSA) the Commission has proposed criteria for determining market dominance with the advantages of this approach in mind. The ORR considers these criteria are relevant to telecommunications. Under the criteria, a single firm is dominant if it:

- has a greater than two thirds market share; *and*
- has no major rival; *and*
- faces sporadic or trivial imports (import penetration persistently below 10 per cent of the market); *and*

- is sheltered by substantial barriers to entry (and expansion of rivals). (IC 1994b p.81)

A firm must 'pass' all tests before it is considered to be dominant. With respect to entry barriers the Commission argues that the focus should be on whether there is a long run cost penalty on new entrants compared with established firms. This differs from the definition adopted by the PSA which states that barriers to entry comprise "any advantage possessed by established firms compared to potential entrants." The Commission considered this definition to be too broad, in that it can treat superior efficiency as a barrier to entry. The basis for each of the criteria is discussed in detail in the price surveillance paper. A copy of the paper is attached for reference.

In applying these principles to telecommunications, however, there are four points which warrant comment.

Firstly, the criteria are an explicit departure from the interpretation of dominance under the TPA (although not necessarily inconsistent with it). As discussed, the *Telecommunications Act* requires AUSTEL to interpret dominance by reference to the TPA, yet the TPA does not itself define dominance. The ORR does not consider it is necessary to preserve the link with the TPA in defining dominance after 1997. Section 50 of the TPA (which provides the link) has a different function to that required for dominance in telecommunications. It relates to whether a merger would result in a firm dominating the market. In telecommunications, policy makers are concerned whether an incumbent remains dominant. The TPA refers to *what will be*, whereas in telecommunications we are concerned with *what is*. Thus the link that existed was never direct anyway. This difference in emphasis is highlighted by the amendment to the TPA which removed 'dominance' as the relevant test. The test now applied under the TPA is whether a merger would 'substantially lessen competition'. Such a test cannot be readily applied to an incumbent in telecommunications. Moreover, continuing to rely on a previous definition does not allow for further interpretation of dominance by the courts in the light of changing circumstances.

The second issue concerns access by competitors to the basic network. The criteria do not stand alone but presuppose a regime for giving access to the existing network. Conceptually the issue of access could fall under the fourth criterion relating to barriers to entry. In assessing whether such barriers to entry exist, one question could be whether a competitor can gain access to an essential facility owned by the incumbent. However, this question is so fundamental to the issue of market power in telecommunications that it is sensible to assume that the criteria only have meaning if an access regime is in place. Access is therefore considered to be a separate issue to whether the incumbent can dominate a market and the

dominance test is intended to operate in conjunction with whatever access regime and other competitive safeguards are considered necessary?

Thirdly, while the third criterion concerning imports has, up until now, had little relevance to telecommunications, the role of imports in some markets should not be discounted in the future. Significant press coverage is being given to ‘call back’ service providers which give access to the international services, and cheaper rates, of telephone companies in other countries. This is a form of imports competition. Similarly, satellite provided television or data services may in time compete with services provided by telecommunications networks within Australia. If these services compete with Australian carriers, they should be considered part of the market for that service when establishing whether there is a dominant carrier in that market.

The final issue concerns giving meaning to the term ‘major rival’ in the second criterion for testing dominance. The market share test and the major rival test are likely to be the key criteria for determining dominance. Notwithstanding the growing potential for imports, there are some markets, such as local calls, that they will never serve. Similarly, with high capital intensity and sunk costs, substantial barriers to entry (the fourth criterion) may also be expected to exist in some markets. While the market share test is explicit, further clarification is needed as to what constitutes a major rival in telecommunications.

The Government’s initial views on what constitutes a major rival may be inferred from the Minister for Transport and Communications’ determination on interconnection pricing. It contains market share levels for a rival that may signal an end to dominance in particular markets. As the BTCE reports:

Under the 1991 determination, the initial [access] charges for intra area and international carriage and switching may cease to apply once certain market share ‘triggers’ have been reached (clauses 12 and 13). The Minister for Transport and Communications (1991, 1) stated that the triggers would be applied flexibly by Austel to ensure that, as far as possible, initial charges ceased when AOTC’s market dominance had genuinely been reduced. (BTCE 1992 p.3)

Although initial charges do not cease when the trigger is reached if the entrant can demonstrate that the incumbent is still in a position to dominate the market, the ‘triggers’ nevertheless suggest a level of market share at which Optus may be able to effectively compete with Telstra. The ‘triggers’ range from 5 per cent for international services to 25 per cent of the total of all traffic in the case of intra-area charges. The most common ‘trigger’ levels are 20 and 25 per cent.

AUSTEL’s views on what constitutes a major rival may be inferred from its *Final findings on mobiles dominance* (AUSTEL 1994a). Mobile telecommunication has recently been released from price cap obligations even though it was judged that

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<sup>2</sup> As mentioned later, the access regime could involve; specific regulation guaranteeing access, access declarations as envisaged by Hilmer, or even structural separation.



Telstra would always be in a position to dominate the market by virtue of its ownership of the analogue AMPS network. Competitive safeguards have been strengthened to ensure that this power is not abused<sup>3</sup> Leaving this access issue aside, however, the removal of the price cap indicates that Optus and Vodafone had established a position in the market that, in AUSTEL's opinion, meant competition was effective for mobile telephone communication. In October 1993 Optus had gained 25.5 per cent of the mobile market leaving Telstra with 74.5 percent (AUSTEL 1994a p.7).

In the long distance market, Optus' market share is known publicly as a result of the ballot process. Its share varies from 18 per cent in Sydney to around 10 per cent, or less, in other areas. There is anecdotal evidence, particularly in the form of advertising and pricing, of significant competitive pressure in the long distance markets.

The ORR's judgement is that a carrier is clearly a major rival if it obtains around a 20 per cent share of a particular market. Whether shares below this figure also signal that effective competition exists is a matter of judgement. Given the apparent level of price competition in long distance markets and in the international market, if the Commission's criteria were followed, Telstra may be close to losing dominance in some of these markets.

**In summary, the ORR considers that adopting clear tests for market dominance would have advantages in terms of certainty for the carriers, and simplicity for the regulator. It suggests that if a carrier 'passes' the following four tests in a market it should be considered dominant:**

- **has a greater than two thirds market share; *and***
- **has no major rival (defined in telecommunications as a competitor with around 20 per cent of the market); *and***
- **faces sporadic or trivial imports (import penetration persistently below 10 per cent of the market); *and***
- **is sheltered by substantial barriers to entry (including from the expansion of rivals).**

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<sup>3</sup> This case illustrates the desirability of separating access issues from the dominance tests.

### 3 Responding to market power

One option to handle market power would be to rely exclusively on general regulation such as the misuse of market power sections of the TPA. However, the Industry Commission has found in a number of reports on specific industries (Rail Transport, Energy Generation and Distribution, Water Resources and Waste Water Disposal) that reliance on court processes alone is unlikely to be effective in all situations. In the Hilmer report, this same concern finds expression in the recommendations for price surveillance and monitoring where there is natural monopoly, and for legislation covering access to essential facilities.

The market dominance tests outlined above identify where market power exists. They provide a ‘trigger’ for actions to prevent the abuse of that power. This section examines what specific responses legislators and regulators can make to attempt to simulate competitive outcomes. The section is divided into regulating the prices of final products such as telephone calls (Section 3.1), and regulating charges for access to the network by new carriers (Section 3.2).

#### 3.1 Price control of final products

There are two possible objectives underpinning regulation of the pricing of final products. Regulation may attempt to prevent carriers with market power from imposing excessive charges on consumers, or it may be aimed at preventing a carrier from charging too little. Charging too little may be used as an anticompetitive measure aimed at stopping other carriers from competing in a market. The price cap arrangements are designed to meet the first objective and the restrictions in the *Telecommunications Act* on price discrimination the second.<sup>4</sup>

##### 3.1.1 *Price discrimination and predatory pricing*

Price discrimination involves charging different customers different prices for ostensibly the same service. The arrangements relating to price discrimination by the dominant carrier have been among the most problematic in the current regulatory framework. Originally price discrimination was taken, per se, to be anti-competitive. However, this raised the possibility that a number of legitimate pricing plans offered by Telstra could contravene the Act. Following the passage of the *Telecommunications Amendment Act 1994*, price discrimination is allowable so long as it ‘will not have, or be likely to have, a material and adverse effect on the development and/or maintenance of commercially sustainable competition’ (Lee 1994). This is described in the issues paper as anti-competitive tariff regulation.

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<sup>4</sup> Accounting separation is also designed to prevent cross subsidies that could inhibit the development of competition.

*The issues paper asks how discriminatory pricing by a dominant carrier in a market should be dealt with after 1997. Has discriminatory pricing regulation been superseded by anti-competitive tariff regulation?*

Anti-competitive tariff regulation prohibits prices that are likely to inhibit competition. The ORR considers that anti-competitive tariff regulation is preferable to regulation which prevents any form of discriminatory pricing, but questions whether industry specific regulation is necessary at all. This is one area where the general provisions of the TPA are likely to be the best approach to prevent carriers engaging in predatory pricing, that is, charging too little for a particular service.

In the context of discriminatory pricing, the issues paper notes the recommendation of the Hilmer Committee to repeal s49 of the TPA relating to price discrimination. The Committee argued that the provision is contrary to the objective of economic efficiency and protects sectoral interests at the expense of society at large. Similar assessments have been made by the Industry Commission in the past. For example, in its inquiry into Raw Material Pricing for Domestic Use, the Commission questioned the relevance of s49:

efficient pricing in raw materials markets demands that a seller be able to discriminate between different buyers. Section 49 may inhibit raw materials suppliers from adopting such an approach for fear of contravening the Act. (IC 1992b, p.24)

These criticisms of s49 apply equally to specific restrictions on price discrimination in telecommunications. There are many instances where it is efficient and a sign of effective competition to charge different customers different prices.

Where price discrimination is undertaken with an anti-competitive intention, protection is likely to be afforded under the TPA via section 46 which prohibits the misuse of market power. The TPC lists price discrimination and predatory pricing as practices which may breach s46 if undertaken by a corporation taking advantage of its substantial degree of market power for a proscribed purpose, and notes that inducing price discrimination is cited in the Explanatory Memorandum accompanying the *Trade Practices Amendment Bill 1986* as a practice that would be in breach of s46 (TPC 1990).

The amendments to the *Telecommunications Act 1991* reflect a residual concern within the Government, however, that specific regulation is required to prevent Telstra using its incumbent position to set prices in an anti-competitive manner. **This raises the issue of whether post-1997 specific regulation is necessary**, or whether the provision of the TPA is adequate to prevent an incumbent carrier charging too little for services in order to deter competition.

Whereas it is well established that a firm with market power will raise prices above a competitive level, it is not so well accepted that firms will charge below costs to drive competitors out of a market or to deter entry. Predatory pricing involves

sacrificing profits in the short run in order to create a monopoly in the future. Success hinges upon being able to increase prices above costs at some future point to recoup previous losses. Considerable uncertainty, however, surrounds recouping of losses — the incumbent may fail to dislodge the entrant or prevent entry, or even if it does, higher prices may encourage other entrants. Although this is an area where opinions differ, there are few identified examples of sustained predatory pricing and the consensus is to regard predation as a rare phenomenon.

One factor in Telstra's case that may provide grounds for concern is that it could possibly cross-subsidise from monopoly services to those services facing potential competition. This is only possible, however, if there are monopoly profits on its monopoly services.<sup>5</sup> If there are appropriate safeguards against the abuse of market power this will be less likely to happen.<sup>6</sup> Baumol (1994) also makes the point that if the price ceiling for the carrier is set appropriately (via regulation) then there is no need to set a price floor because the carrier will not have the capacity to raise prices above costs to recoup losses.<sup>7</sup>

**Overall, the ORR's judgement is that sufficient protection against anti-competitive conduct via discriminatory pricing is provided by the general provisions of the TPA prohibiting misuse of market power (s46). Because of the likely infrequency of anti-competitive pricing by a dominant carrier, the ORR considers that post 1997 specific measures to prevent anti-competitive pricing of the sort currently in place are not required.**

### 3.1.2 *Controlling maximum prices*

Telstra has operated under price caps since 1988. The current cap allows prices overall to rise annually by no more than the CPI minus 5.5 percentage points. Sub caps for individual services provided by Telstra allow it to partially rebalance its tariffs to more closely approximate its costs for different services. *The issues paper asks whether there is a role for price caps after 1997.*

The objective of any intervention by government to influence pricing by a natural monopoly is to limit prices to those that would prevail if the service was provided competitively. Baumol (1994) defines these prices to be no higher than the stand

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<sup>5</sup> Or if the government was prepared to accept low dividends as a shareholder.

<sup>6</sup> Price caps should prevent the problem but rate of return regulation will exacerbate it because the ceiling is on total profits. A firm could earn excess profits on one service and use these to cross subsidise a service where it faces competition — earning only a normal profit overall.

<sup>7</sup> If no prices are set above stand alone cost for the carrier, then equally no prices can be set below average incremental cost.

alone costs of the service.<sup>8</sup> The Commission's report into rail transport also endorsed stand alone costs as the appropriate price ceiling (IC 1991b pp.74-75).

There are three broad regulatory approaches which can be employed to prevent the abuse of market power. These are:

- monitoring and surveillance of prices;
- cost based regulation such as rate of return regulation<sup>9</sup>; and
- price capping.

The Hilmer committee recommended against direct price control arguing that, even in the case of natural monopolies, the role of Government should be limited to prices surveillance and monitoring. Under surveillance a firm considering increasing prices provides the regulator with data on its costs, and the regulator makes a judgement about whether the price rise is justified. This approach is seemingly less intrusive than other approaches because prices are not controlled, but it may not be less intrusive in practice. Because firms almost never disregard the regulators judgement, surveillance effectively becomes a form of price control. If, based on cost data, the regulator expresses a judgement that a price rise is not warranted, then surveillance is akin to rate of return regulation. Industry Commission inquiries have found that 'prices surveillance has had detrimental long-term effects on consumer choice and industry investment' (IC 1994b). On the other hand, if prices are monitored but no opinion expressed, there is unlikely to be any significant effect on firms' behaviour.

The limitations of cost-based, or rate-of-return regulation are well known. Such regulation provides an incentive for cost padding because higher costs mean higher allowable profits. It also reduces incentives for innovation because the firm cannot capture the benefits of innovation: if costs decrease then allowable profits decrease. Administratively, there are high costs associated with collecting and assessing the data needed to set the rate of return. A regulator can never be as knowledgeable about the costs of production as the monopoly firm itself. On the other hand, as AUSTEL has observed, this approach does, at least, provide regulators with a relatively simple tool to both limit and control prices (AUSTEL 1994b p.3).

Price caps are a relatively new approach to controlling prices and are strongly supported, for example, by Baumol (1994) as the best way to limit prices in

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<sup>8</sup> The stand-alone cost test requires that revenues from any service or group of services fall below the total cost (including the cost of capital facilities evaluated at the current cost of capital) which would be incurred by supplying that service or group of services in isolation. Ramsey pricing - pricing to minimise the welfare loss to society arising from the monopolist covering its full costs in a decreasing cost industry - has widespread support as the best approach in theory. However, it is equally widely recognised that it is inapplicable in most situations because of the need to calculate elasticities of demand for the service and its substitutes.

<sup>9</sup> Under Rate of Return regulation a monopolist is not allowed to earn more than a commercial return on the value of its assets.

telecommunications markets. The price cap is usually expressed as some general index, for example the CPI less the expected productivity gain in the industry, usually termed X.

The potential advantages of price caps are that:

- they provide firms with incentives to pursue efficiency and innovation because if the firm achieves efficiency gains greater than those built into the cap it retains the additional profits;
- allows the firm flexibility to adjust the structure of prices set by the cap; and
- may be simpler to operate in the period after X is set. (AUSTEL 1994b p.4)

One result of allowing the firm to retain efficiency gains once X is set is that the firm may be able to earn excess profits if productivity improvements exceed X. Rather than this being a problem, Baumol cites this as neatly simulating a competitive market outcome. If a firm innovates, other firms can be expected to follow suit bidding away excess profits, but this process is not immediate and, in the interval, the firm enjoys the reward for innovation through higher returns. The regulator will simulate firm entry by increasing the X at the next scheduled adjustment to reflect the higher productivity achieved.

Price caps are by no means a perfect solution, however. Despite administrative simplicity, CPI minus X price caps can involve as many informational demands as cost-based approaches. The tasks involved in price capping include: setting initial prices; designing the baskets of products subject to X; setting and resetting X; deciding how often to update the X; reevaluating the contents of the product basket; and selecting the appropriate reference price index (Liston 1993, p.30). The CPI is also a questionable base on which to subtract X because there is no strong relationship between the costs of the natural monopoly and the CPI. In addition, notwithstanding the benefits of innovation, AUSTEL has observed:

the process of determining X needs to have regard to a number of factors, such as likely productivity trends, investment needs, profit and dividend targets. *This makes X determination process not dissimilar from establishing an appropriate rate of return .* (emphasis added) (AUSTEL 1994b)

A further potential problem is that, over time, a price cap may develop some of the same faults as rate of return regulation. As the Commission's Electricity Generation and Distribution report said (IC 1991a, p.89):

it has been argued that a CPI-X approach evolves, in the medium term, to a profit limiting mechanism. This occurs because governments will tend to increase the value of 'X' in periodic reviews if observed past profits are seen as above industry averages, and reduce it if profits are perceived as relatively low. .... In this light, CPI-X would have the same faults (eg cost padding and inefficient increases in capital or equity) as direct profit controls.

Given the limitations of each approach, the ORR considers that the choice of mechanism to combat the abuse of market power in particular industries can only be undertaken on a case by case basis; no single approach will suit all situations.

Monitoring and surveillance as advocated by Hilmer may be appropriate in many industries. In such a high profile industry as telecommunications, however, the public may not consider monitoring or surveillance alone to be credible responses to controlling market power. This is despite the fact that, in practice, surveillance is not less interventionist than more direct forms of price control.

The Commission's submission to the PSA concluded that price caps were useful during transition from monopoly to competition although it questioned their relevance thereafter. It argued that "the productivity gains are predictable and large during the transition period, so regulators are likely to set a demanding price cap." (IC 1994b, p. 9)

Based on the evidence provided in that same submission, the ORR considers that price caps may have a role in the telecommunications industry post-1997 as well as in the period up to deregulation. Telecommunications will be characterised by rapid technological change for the foreseeable future. It is likely the industry will face continual transition driven by technology as well as by deregulation, and continued monopoly in certain areas. In this situation, as the Commission submission stated:

In industries in technological or structural transition, a CPI minus X price cap could, if the X is set at a realistic level, lead to sharing of cost-savings with consumers, give firms a reasonable chance to good profits, spur innovation, and introduce an additional discipline on costs. (p.70)

The IC submission also reported that:

Mathios and Rogers (1989) used cross-sectional variations in state regulatory practices in the United States telecommunications industry for the period 1983-1987 to show that, compared with cost-based forms of pricing, price caps lowered prices by an average of 7 per cent. (p.71)

**On balance, the ORR considers that there is likely to be a continuing role for price caps as an instrument to control the abuse of market power by dominant firms in a deregulated telecommunications industry post-1997. Any price cap arrangements should be reviewed after 3-5 years of operation.**

One option other than the immediate introduction of price caps would be to implement price monitoring in the first instance, but with the explicit threat of a price cap if market power was subsequently abused. Such an approach would initially be administratively simple and would not be overly heavy handed if no problem in fact emerged. At the same time, it would place the carrier under pressure to price appropriately because action would be taken if it abused its market power. The success of such a strategy would hinge on the Government communicating to the carriers its preparedness to use price caps if required. This is significantly different to the Hilmer approach of monitoring but without the threat of price control.

A final point is that, where more direct market tests for prices are available, these would of course be preferable. For instance if there was competition in some long distance markets but there was a dominant carrier in others, it would be sensible to use the competitive market as a yardstick for the prices that should apply in the non-competitive market.

### 3.1.3 *Price monitoring in borderline cases*

Monitoring may also be a useful temporary measure to demonstrate the benefits of competition. The potential role of price caps is confined to markets where a carrier exercises dominance. Section 2 suggested criteria to make it easier to determine whether a carrier was dominant. Nevertheless, there may still be cases where such judgements are difficult, and there may be other cases where no carrier is dominant but there is public concern that competition may not be effective, for instance if the duopoly continues in some markets after 1997. The Industry Commission, in its submission to the PSA, suggested that in borderline cases there may be a role for transitional price monitoring:

a transitional period of price monitoring may be a useful device for assuring consumers that unforeseen difficulties will be quickly identified. ....and .... [it] would allow governments to avoid stepping away from an industry so quickly that necessary public support for reform is undermined. (p.83)

The Commission's petroleum report also supported a period of transitional monitoring. It stressed that a broad range of factors relating to industry performance should be examined, not just price.

The objective of monitoring is to judge whether competition is effective. If it is ineffective, monitoring may signal the need for further action. Those undertaking monitoring need to have a clear perception of what they are looking for. The Commission (1994) notes a range of factors that may indicate that competition is not fully effective. These are as follows:

- unusually stable market shares;
- regional price differences that cannot be explained by differences in cost or demand;
- a sudden unexplained increase in industry profits, followed by a gradual decline;
- a sudden unexplained increase in price, combined with a reduction in output;
- a declining market share among leading firms in the industry (as the major firms decrease output to raise prices);
- market-wide resale price maintenance;
- market-wide price discrimination;
- a high elasticity of demand at the current price.



If monitoring is adopted in any form post-1997, the ORR suggests that its usefulness would be enhanced if the regulator was provided with specific guidelines or a checklist, to provide it with some direction in the process of determining whether competition is effective.

### **3.2 Interconnection pricing**

*The issues paper asks what arrangements should apply in relation to charges for access, interconnection and supplementary services.*

The involvement of government setting charges for interconnection, or at least being prepared to mediate in commercial negotiations, is another response to the concern about market power. In this case the power exists in relation to the market for inputs rather than final outputs. Interconnection arrangements are likely to be one of the key issues in the review.

There is a spectrum of views on how access to networks should be governed. At one extreme Bork (1978), Baxter (1989) and other Chicago School economists question whether an access regime is required. They point out that private monopolies are profit maximisers like other firms. From this they infer that if a competitor can provide part of the monopolists service at lower cost, then it may be rational for the monopolist to contract out that service to the competitor and thereby lower its own costs. Most other economists and policy makers, however, question the practicality of this approach and advocate access regimes where the facilities involved are natural monopolies. These regimes range from specific regimes, such as apply currently in telecommunications, to essential facilities legislation as envisaged in the draft National Competition Legislative package.

Even with a light handed approach as advocated by the Hilmer Committee, it is necessary for a regulator to form a view as to what charges should apply for interconnection — if only so it can mediate in any dispute between firms. Pre-announcing the regulator's approach on setting access charges may increase the likelihood that the parties could successfully negotiate an outcome without involving the regulatory authority.

#### **3.2.1 Current arrangements**

Under current arrangements, Optus initially connected to the Telecom network on the basis of principles determined by the Minister!<sup>10</sup> These principles were that charges are:

- to cover the costs necessarily incurred in interconnection;
- to include a commercial return on assets used to provide interconnection; and

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<sup>10</sup> *Telecommunications (Interconnection and Related Charging Principles) Determination No 1 of 1991.*

- to recover not less than the costs necessarily incurred in interconnection!<sup>1</sup>

Initial charges are a transitional measure designed to establish competition. Once certain triggers are reached in terms of market share, or preselection ballots take place, these charges can be renegotiated. This has occurred in a number of markets. Negotiation for subsequent charges was to be on a commercial basis between the carriers in the first instance. AUSTEL became involved as a mediator in setting subsequent charges at the request of the carriers.

The principles for setting initial charges appear to translate to charging the Average Incremental Cost (AIC) of access to the network!<sup>2</sup> The principles ensure that direct costs and capital costs associated with particular services are included in the charges, but that overheads or other common capital costs are not, in theory, covered.<sup>13</sup>

In setting subsequent charges, AUSTEL's basic approach is to ask what charges could prevail if Telstra was just a wholesaler of interconnection. This appears to be akin to asking what sort of charges would apply if structural separation occurred and the network was operated as a common carrier. It aims to simulate the charges that could result if they were set on a competitive basis under commercial negotiation. In the ORR's view, this may approximate setting charges to cover the Long Run Average Cost (LRAC) of the network. While the charges negotiated on this basis are confidential, Telstra and Optus released a statement saying that on average interconnection charges would rise by 10 per cent over those initially determined by the Minister.

### 3.2.1 *Options for interconnection charges after 1997*

Although negotiation of access charges between the carriers is the preferred approach, in some cases agreement may not be possible. In a fully deregulated telecommunications market, there could be a role for Government to set the basis for these charges, or to mediate in disputes, if the owner of a single network does not allow access to that network at prices which will allow effective competition to develop in the market for final services. Access to such 'bottlenecks' by competitors is then necessary for competition. This fact underpinned the Hilmer Committee's recommendations on access to essential facilities. Rules for access charging in the post-1997 telecommunications arrangements could be applied either

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<sup>11</sup> Although similar, the first principle is intended to set the level of charges, while the third principle sets a floor.

<sup>12</sup> The Average Incremental Cost for an entire service is the difference in the firm's total cost, with and without the service, divided by the units of output of that service. It includes variable costs such as labour and maintenance, and any fixed cost that must be incurred on behalf of that product alone.

<sup>13</sup> The policy debate in Australia over the measurement of Community Service Obligations (CSOs) — avoidable costs versus fully distributed cost — brought out that attributing overheads is not easy in practice.

through access declarations as envisaged by Hilmer, or through specific telecommunications regulations administered by AUSTEL, as is the case at present.

**The objective of setting access charges is to structure prices so that a firm will enter the market if it is efficient to do so, that is, if it can provide services at the same or lower cost than the incumbent. Thus, access prices should neither subsidise nor penalise an entrant compared with the incumbent.**

However, it is not straight forward to determine what charges are efficient in practice, and how they should be calculated. The conceptual difficulty of access charging arises from the natural monopoly attributes of the network— costs per unit of output decrease over the entire range of production. Pricing at marginal cost would leave the network owner making a loss since, at the market level of demand, the marginal cost is lower than average cost. The network owner must charge an access price above the marginal or incremental costs of access to the network to cover capital and other fixed costs not attributable directly to a particular service.

There are at least three possible approaches to pricing access to the network. Charges can be based upon:<sup>14</sup>

- the Average Incremental Costs of providing access;
- setting prices so that the incumbent's total revenue covers the Long Run Average Cost (LRAC) of the network; and
- setting prices using the Efficient Component Pricing (ECP) rule which is explained below.

Initial charges for access by Optus were based on the average incremental costs of the network. This may be a satisfactory approach while the entrant's market share is relatively low. However, because the entrant makes no contribution to the incumbent's common fixed costs, incremental cost charging becomes unsustainable as market share grows. Under this approach the entrant would be expected to quickly gain market share based on an artificial cost advantage. It thus violates the objective of efficient pricing.

Without knowing the precise details of AUSTEL's approach to setting subsequent charges, the approach could represent an example of pricing to cover LRAC. AUSTEL allows Telstra to recover all costs associated with interconnection (the incremental costs) but charges also include a component to cover Telstra's common fixed costs. Overall Telstra should earn a normal rate of return on its network operations. This may be termed a cost-based approach to setting access charges.

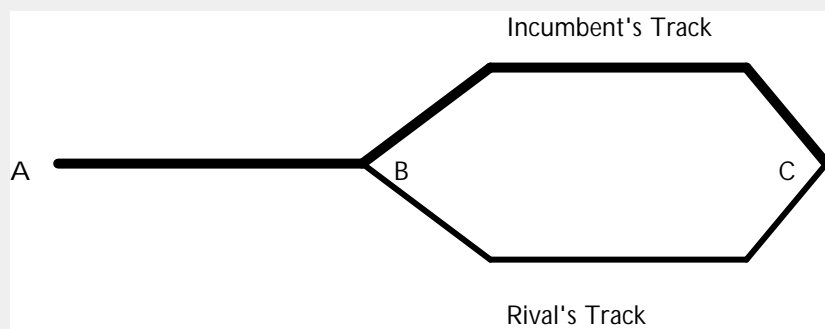
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<sup>14</sup> The ORR is also aware that there is a time-of-day and capacity dimension to interconnection pricing. It does not consider, however, that this should fundamentally alter the analysis. As Cave 1994 says — “it should be possible to translate any interconnection pricing system based upon sharing capacity costs into a precisely equivalent system of time-of-day pricing for interconnection services” (p.62).

The third approach to setting prices is known as the Baumol-Willig rule, or ECP rule. This involves charging an entrant the incremental cost of its access to the network, plus the opportunity cost of the incumbent. Baumol defines the opportunity cost as the revenue the incumbent will forgo from giving access to the entrant (see Box 1 for an example). In the telecommunications context, the entrant will be charged incremental costs plus the net revenue, or profits, that Telstra loses because the new

**Box 1: *Efficient Component Pricing***

Baumol originally presented the efficient component pricing rule in the context of railway pricing. The railway example remains the best way to understand the rule.



A railway company (the incumbent) owns track from A to C. A rival company owns a different route from B to C. The rival wants to offer a service from A to C. The question is what should the competitor be charged for access from A to B?

The incumbent's incremental cost on A to B is \$3.00 a tonne, and on B to C also \$3.00 per tonne. It is assumed in the example that the competitive market price for carriage from A to C is \$10.00 a tonne. This leaves the incumbent with \$4.00 per tonne net revenue.

Under the ECP rule the rival is charged the incremental cost of access plus the net revenue forgone by the incumbent. In the example it is assumed that if the rival carries a tonne of cargo this is 1 less tonne for the incumbent.

Thus:

Incremental cost	plus	revenue forgone	equals the access charge
\$3.00	+	\$4.00	= \$7.00

At a price of \$7.00 a tonne the rival will enter the market only if it can provide carriage from B to C at less than or equal to the incumbent ie  $\leq$  \$3.00 per tonne.

If prices are competitive, the incumbent does not make monopoly profits. In this case the net revenue of \$4.00 per tonne represents common costs of the network not attributable to particular service. This is why this amount must be included in the charge. If it wasn't the rival would be artificially advantaged over the incumbent. The incumbent would be losing market share and be unable to fund its common costs.

carrier takes some of its customers. The rule assumes that Telstra sells its services in the market at competitive prices.

The ECP rule has been thrown into sharp relief by the New Zealand High Court case between NZ Telecom and Clear Communications. The court first supported ECP as the basis for access charging, but the decision was subsequently reversed on appeal.<sup>15</sup>

An important issue for the policy review is, therefore, to decide what basis should be used to set prices for access to the network. **Under conditions where the carrier is not making monopoly profits, both the cost-based approach and the efficient component pricing rule could yield the same prices and both could meet the objective identified above.** This is explored in the attachment.

Each approach has advantages and disadvantages and it is difficult to identify which in practice is likely to be the more efficient.

The main advantage of cost-based approaches is that prices can be calculated from cost data supplied by the carriers. Regulators can be relatively certain that while prices may not be the most efficient possible, they lie within a range of acceptable prices. That range is bounded by the incremental cost as the floor and the stand-alone cost as the ceiling. A disadvantage of this approach is that it is especially difficult in telecommunications to allocate shares of capital, both direct and common between different services and hence different carriers. A switch or exchange used by both carriers may have large unused capacity. In this situation rules for sharing costs will be partly arbitrary, and based on accounting division rather than on economics. Indeed, as Taylor points out with respect to retail customers accessing the network :

No economist seriously believes that marginal or incremental cost of providing access to the local exchange can be read from telephone company books of account. (Taylor 1993)

Baumol and Willig, who gave evidence in the New Zealand case, strongly support the ECP rule, arguing that it derives directly from marginal cost pricing.

Economic analysis emphasises that the pertinent marginal cost as well as the average-incremental cost must include all opportunity costs incurred by the supplier in providing

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<sup>15</sup> For a discussion of the case see Pengilly 1993.

the product. Here opportunity cost refers to all potential earnings that the supplying firm forgoes, ... by offering services to competitors that force it to relinquish business to those rivals, and thus to forgo the profits on that lost business. (Baumol 1994, p.94)

From Telstra's viewpoint the marginal cost of Optus joining the network is not only the incremental cost but also Telstra's own lost net revenue. One advantage of this approach would appear to be its strong theoretical underpinnings. However, as discussed above, cost-based pricing can be equivalent to ECP if the common costs of the network are attributed correctly. The amount of net revenue forgone under the ECP rule should equal the contribution to overheads and common capital costs under the cost-based approach. **Both are methods for making sure that the incumbent's prices cover full costs but do not penalise the entrant.**

Another potential advantage of the ECP rule is that this approach avoids difficult calculations, or negotiations, over what part of common costs should be charged to the entrant. Once incremental cost has been calculated— a requirement of both approaches — no other cost data is required. While this is true, this advantage has to be balanced against the need to estimate what level of revenue Telstra will lose by Optus' entry. This task is not easy and is not the same as estimating Optus' revenue. As recent experience has demonstrated, competition has led to a rapid expansion in the market. Because of this Optus may gain more than Telstra loses. Although Optus' revenue will be observable over time, the amount of market Telstra has lost will not be observable, and will be based on judgement.

The greatest controversy with the ECP rule, however, arises with the assumption that there is no monopoly pricing in the retail market for telecommunications services. If an entrant has to compensate the incumbent for lost monopoly profits, it will also have to effectively charge monopoly prices in the retail market. Even if there is vigorous competition, under these conditions monopoly prices would be entrenched in the system. If this occurs consumers will be denied the full benefits of competition. It is also an open question whether competitors will be discouraged from entering a market if the access charge includes the incumbent's monopoly profits, some commentators think not; others argue they will be!<sup>16</sup>

Baumol accepts this criticism but argues that the pricing rule for network access is not the problem, rather that monopoly pricing results from inadequate controls by regulators on final prices (price caps or other controls). The ECP rule is not designed to control final prices so why should it be criticised for not doing so? This

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<sup>16</sup> Kahn (1994) argues that the absolute level of the interconnection charge does not matter for efficient entry, so long as the margin between the interconnection price and the price of retail services is the same for both carrier. Therefore, even if there are monopoly profits to the incumbent, which it factors into the interconnection charge because it represents the revenue forgone, this does not matter so long as the entrant can also charge the monopoly retail prices. Competition will take place on the basis of whoever can provide the retail service, on which they are directly competing, the cheapest. Other commentators (Tye 1993) and MacAvoy 1993 are not so sure that incentives for entry are not affected.

is obviously the case, but it raises the question— can a regulator be confident that final output prices do not contain some monopolistic profits, or put another way that it has controlled market power effectively. The ORR questions whether such confidence could be justified with respect to telecommunications in Australia at present.

In the case of Telstra, price capping has been relatively successful in passing productivity gains onto the consumer, however, at no stage has it been estimated whether a price cap has operated on the correct base. The BIE conducted a best-practice study of telecommunications in 1991 which found that in some cases prices were 35 per cent higher than the level it had identified as best practice from a similarly configured telecommunications system. Traditionally, Telstra has made excess profits on some services, such as long distance calls, and has cross subsidised others. Competition is forcing a rebalancing of tariffs, but there may be some way to go before the prices of all services reflect the cost of production. If a regulator cannot be confident that prices are efficient for final products, caution should be exercised before the ECP rule is used to calculate access charges. As MacAvoy (1994, p.18) states in his summary of the debate in the US:

There has been little progress, however, in reforming regulated rate structures. The regulatory commission and agencies have not evaluated the rate structure for telephone or cable services to test conformity with efficiency principles ..... Therefore the urgency of [these] findings may require postponing adherence to Baumol and Sidak's principles of efficient component pricing.

Overall, in determining access charges, it is important to have a clear objective of neither penalising nor subsidising potential entrants. There are a number of ways of achieving this objective, one of which is the ECP rule. However, the ORR does not consider that the ECP rule provides a simple or ready-made template for access charging post-1997, and that it should not be endorsed without careful consideration of its implications for competition in the telecommunications industry. **Setting access charges appears to be part science and part art. In this context an approach that aims to set interconnection prices so that, in total, the network's LRAC are covered may, in practice, be just as satisfactory as the Baumol-Willig model.**

#### **4.0 General or specific regulation**

The Commission has examined the issue of general versus specific regulation in a number of inquiries including *Rail Transport* and *Electricity Generation and Distribution*.

The debate is neatly encapsulated by the phrase “knowledge versus capture”. The advantage of having a specific regulator is that it can acquire the detailed knowledge necessary to efficiently police an industry. The disadvantages are that

there is a tendency for the regulatory body to be captured by the industry, and consistency may not be achieved across different industries. In its inquiries the Commission has found that the direct and indirect costs of specific regulation could be significant, although it has acknowledged that the Trade Practices Act was unable at present to adequately handle issues such as the exercise of monopoly power and access to facilities.

The issues paper expressed a preference for general regulation where possible. The ORR supports this view, but notes that it may be difficult to accommodate all of the policy concerns for telecommunications within a general regulatory framework. Some of the suggestions in this submission would seem to require specific regulation.

Even where specific regulation is required, that still leaves the issue open as to who administers the regulation— a general or specific body. One option is to have specific regulation administered by a general body such as the proposed Australian Competition Commission. This may avoid capture problems, and may also allow similar problems to be treated in similar ways between different industries. In Commission inquiries participants raised the issue of whether the TPC, or in this case its successor body, had sufficient resources to perform specific functions. If the Government opted for this approach it is likely that some or most of the resources of AUSTEL would need to be located within the general body. Interestingly, on this point the TPC commented to the *Electricity Generation and Distribution Inquiry* (IC 1991a, p.87) that:

It is, however, difficult to be precise at this time about the additional resources which might be required by the TPC, although requirements should be more modest than for an industry-specific approach .... it could be argued that each and every industry with which the TPC deals requires some such [technical] knowledge. This does not prevent the application of the TPA to the great bulk of the economy (including some sectors like aviation and the waterfront which are undergoing restructuring).

This raises the possibility of some economies of scale and scope arising from centralising regulatory functions, in addition to the benefit of obtaining a consistent approach across most industries.

Beyond these comments the ORR has no particular expertise on this issue. It does, however, consider that having one regulator administering a number of specific arrangements, should be investigated as it may provide a sound compromise between general regulation and having specific regulatory bodies overseeing specific industries.



### **Efficient component pricing compared to Long Run Average Cost Pricing**

Pricing to cover the stand alone Long Run Average Costs (LRAC) of the network and Efficient Component Pricing (ECP) can, under ideal conditions, be equivalent with one another. A numerical example of equivalence is provided in Box 2. The possible equivalence of the two approaches is best understood by asking what level of revenue from interconnection is gained through the ECP rule. Under ECP the access charge comprises two components: the incremental cost of its use of the network, and the net revenue the incumbent would lose.

Because the retail prices of services are assumed to be competitive, we know that the incumbent is not making excess profits. Therefore, the opportunity cost component of the charge (the net revenue forgone) *must necessarily only cover the incumbent carrier's common fixed costs for the network.*

Turning to LRAC pricing, the entrant also is charged the incremental cost of access to the network. In addition it is charged a proportion of the incumbent's common fixed costs, otherwise the entrant will be advantaged compared to the incumbent. This component should be equivalent to the revenue forgone under ECP because, as we saw above, revenue forgone also is a contribution to common fixed costs.

It is possible for both pricing levels to deviate from the ideal. Under LRAC pricing the wrong contribution to common costs may be charged to the entrant, either advantaging or disadvantaging it vis a vis the incumbent. In the case of ECP if the incumbent's prices do contain excess profits, the access prices will not be the same as those calculated by pricing to cover the network's LRAC, and the full benefits of competition will not be passed onto consumers.

In this context neither approach is necessarily superior. It is the objective of not penalising or subsidising the entrant that is important and this can be achieved in a number of ways. The choice between pricing approaches, in the final analysis, depends, not on alleged theoretical superiority of one rule over another, but on which is easiest to implement in practice.

### **Box 2: Numerical example: equivalence between LRAC pricing and ECP**

Assume that the stand alone cost of a network owned by Telco is \$100m. Of this \$50m are the capital and variable costs directly attributable to providing the service.(ie it is the average incremental cost) and fixed costs, not directly attributable to a service represent \$50m. Because the costs include a normal rate of return on assets, in a competitive market Telco's revenue is also \$100m.

Assume a new entrant, NewTel, gains access to the network and captures half of the market. Assume for simplicity that the market does not grow.

Under LRAC pricing, the entrant is charged the average incremental cost of access to the network which is half of \$50m which is \$25m. It would also be charged a contribution to common fixed costs. If it has half of the market a sensible rule would be to charge it half of the common costs as this results in the entrant and the incumbent facing the same prices for interconnection, that is \$25. **The total charge payable by NewTel to Telco under LRAC pricing is \$50m**

Under ECP, NewTel is also charged an average incremental cost of \$25m. It is also charged the net revenue forgone. Telco has lost half its market therefore has lost half its net revenue. Net revenue is the gross revenue less the costs to get the revenue. This is \$50m less the incremental cost saved, which is \$25m leaving \$25m net revenue forgone. **The incremental costs plus the revenue forgone is \$50m.**

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