Submission in response to the ACCC's draft information paper on bundling

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1 Introduction

Telstra has commissioned NECG to provide an analysis of the economic issues discussed in the Commission's Draft Information Paper on Bundling in Telecommunications Markets (the "Draft Information Paper"), and on the reports prepared for the Commission by NERA on Anticompetitive Bundling Strategies, and Imputation Test for Bundled Services.[1]

Bundling currently plays an important role in telecommunications markets, and will be an increasingly important dimension of competition in future. Bundling can provide substantial benefits to customers and suppliers, and, as highlighted by the Commission,[2] can have a welfare-enhancing effect. As a result, it is in the interests of end users for the Commission to ensure that competitive bundling is not inadvertently discouraged due to either uncertainty on the part of telecommunications suppliers as to what bundling conduct is and is not permitted, or because too strict standards are enforced.

The Commission's release of a draft information paper is an important step forward in reducing that uncertainty. However, a good deal of uncertainty remains and further clarity would be of great value. In particular, contestable bundles and bundles with elements also available on an unbundled basis should not be considered anti-competitive merely because they are bundled.

The Commission proposes the use of an imputation test to analyse pricing effects. The imputation test, based on avoided costs, is a relatively simple and economically sound means of demonstrating the absence of an anti-competitive price squeeze. It is widely used for this purpose. Despite this, the Commission has proposed that two imputation tests be undertaken: one based on average variable costs and another based on average total costs. If the first test passes but the second fails, then the pricing offer falls into a "grey area" and the Commission would conduct further assessment with references to "other factors".[3]

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1 Hereafter respectively referred to as ACCC, 2003; NERA, 2003a; and NERA, 2003b.

2 ACCC, 2003, 6 and NERA, 2003a, 4. NERA provides an extended discussion of the benefits of bundling at 8 ff.

3 ACCC, 2003, 19.

This approach will have harmful consequences for consumers and economic efficiency. Foremost, the use of average total costs to set Telstra's price floor forces Telstra's retail prices above competitive levels. Prices in effectively competitive markets recover total costs in the long run, but on any increment of output can be as low as the costs of that increment. Requiring that Telstra's prices must exceed this would remove an important source of competition from the market. Telstra also must have the freedom to match cuts in its rivals' prices. Additionally, use of any form of average cost tests, most especially when coupled with assessment of what is vaguely described as "other factors", will add a great deal of uncertainty to what is permissible and what is not. Such uncertainty will further reduce competition in the formulation and pricing of bundled services, including reducing investments in new services and infrastructure enabling service bundling. This generally will make Telstra more timid in competing, an effect that will likely also reduce the aggressiveness of its rivals.

NECG strongly recommends the use of an imputation test based on the avoided costs of the vertically integrated firm. Such costs likely approximate the efficient costs of supply and certainly do so better than any average cost measure, and provide the convenience of focussing on a known firm's costs.

Finally, NECG believes that the Commission's proposal to release cost information in any extension of the RKRs is fundamentally misguided. It would facilitate tacit collusion by providing competitors with visibility of Telstra's price floor. Moreover, if an average cost standard were used in the imputation test, this would enable Telstra's rivals to just undercut Telstra without allowing Telstra to respond. The net result would likely be both higher telecommunications prices and a substantial loss in Telstra's market share and market value.

The remainder of this paper is structured as follows:

- Section 2 discusses product bundling, including what makes a bundle; the economic rationale and role in telecommunications markets of bundling, and regulatory concerns raised by bundling;
- The imputation test is covered in Section 3;
- Section 4 recapitulates NECG's recommendations on a regulatory approach to bundling and the choice of cost base to be used in the imputation test; and
- Section 5 concludes.

2 Product bundling

2.1 Characteristics

In general, "product bundling" occurs when a supplier makes a product available for sale together with other products, and the range of products the purchaser chooses to buy affects the terms on which it can be acquired. Product bundles or packages are prevalent across a range of competitive markets and customer groups, can occur over widely different products, and in many cases form an important dimension of competition. For example, in the tourism industry, the offering of packages that include accommodation, airfares, car hire and transfers, is a key aspect of competition for recreational travellers.[4]

Bundled offers can be classified into two categories. The first, "mixed bundling" occurs when at least one product in the bundle can be purchased individually as well as being available in the bundle. The second, "pure bundling" occurs when all products are only available for purchase as part of the bundle.[5]

When at least one product is not available outside of the bundle, a "tie" exists (the firm engages in "tying").[6] A tie necessarily occurs in a pure bundle, and occurs in a mixed bundle if one or more of the bundled products can only be bought by purchasing the bundle.[7] The product that must be bought to enable purchase of the other products in the bundle is referred to as the tying product whereas the other products are the tied products. Tying commonly occurs in effectively competitive markets (for example, in the supply of shoes and shoelaces or cars and tyres) and cannot have an anti-competitive effect absent substantial

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4 See, for example, R. Preston McAfee, 2002, *Competitive solutions: The strategist's toolkit*, Princeton University Press, 277-278.

5 Terminology due to Adams, WJ and Yellen, JL, 1976, Commodity bundling and the burden of monopoly, *Quarterly Journal of Economics*, 90: 475-98.

6 Benjamin Klein, 1998, Tying, in *The New Palgrave Dictionary of Economics and the Law*, Ed. by Peter Newman, Macmillan: London, 630-34.

7 The Commission considers Telstra's bundling of pay TV in its rewards packages to be a tie (ACCC, 2003, Information Paper, 4). This is incorrect. Both the pay TV and the telephony services offered in the bundle may be purchased independently.

market power over the tying product.[8] From the perspective of an economist, this implies that tying with an anti-competitive purpose is improbable where substantial market power over the tying good is absent. Such behaviour would be irrational as it could have no anti-competitive effect and indeed would likely harm the tying firm.

Bundling throughout the rest of this paper refers to all forms of bundling including ties.

2.2 Economic rationale

On the supply side, bundling[9] assists firms in achieving cost savings in the production and/or distribution of services as well as providing a means of quality assurance. On the demand side, bundling can reduce consumers' transactions costs by providing them with the combinations of services that match their needs, and can assist firms in stimulating demand for new services. Bundling also allows firms to competitively lower effective prices while ensuring continued cost recovery. These benefits are now explained in detail.

Bundling can reduce the costs of supply by allowing firms to achieve economies of scale and scope through better planning of production and economies in activities such as marketing, billing and collection. If bundling increases the utilisation of the network, as will often be the case, this spreads inframarginal costs over more products and customers. Moreover, demand can be readily stimulated since the incremental cost of offering an extra service typically is substantially lower than the inframarginal costs associated with the service and commonly this will be facilitated by bundling.

Significant cost efficiencies can also be achieved in respect of operational costs. Examples of operational costs that likely can be shared across products due to bundling include customer care, sales and marketing, customer acquisition, billing and debt collection.

Bundling, especially through tying, can also be used as a means of quality assurance. For example, a franchisor seeking to maintain retail quality may require its franchisee's to buy inputs from the franchisor thereby tying these inputs to the use of the franchise name. Alternatives to this might be to either run the risk that cheaper inputs would be used,

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8 Klein, *ibid*, 630, 634; McAfee, *ibid*.

9 Klein, *ibid*, 631-634, provides examples of ties used to assure quality, increase efficiency and enable efficiency-enhancing price discrimination. The possibility of tying for anti-competitive purposes is discussed in Section 2.4.

harming the franchise name, or for the franchiser to engage in expensive monitoring of franchisees' input quality. Tying arrangements for quality assurance can be particularly important when outputs depend on vertical sequences in supply and consumers cannot tell which supplier is at fault. For example, in telecommunications a failed long distance call may lie within the local network or the long distance network and a low-quality supplier of one service could blame the other supplier for faults experienced by the customer.

Efficiencies from bundling may also arise across different companies, especially where there are high customer acquisition costs and there is some degree of complementarity between products. For example, Telstra's bundling of pay TV with telephony services might allow Foxtel to increase its subscriber base at a lower cost than if Foxtel sought to do this by itself. Moreover, the bundle might reduce Telstra's churn rates, which are a significant cost source.

On the demand side, bundling provides benefits to customers in the form of simplifying the product selection, payment and enquiry process and it may also assist customers in budgeting. Customers may find the selection process much easier if they can simply choose a package rather than having to decide which and how many of each individual product they would like. In respect of the payment process, customers may prefer to have one bill that they have to pay rather than several. Customers could also benefit significantly from having a single point of service for their enquiries, for example, where a technical problem occurs and it is not clear as to which product the fault is due to. A single point of enquiry for billing and change of service questions and requests is also likely to be valuable to the customer. The ability to purchase a package can also assist customers in budgeting, for example, by making total bill estimation easier.

In industries with high inframarginal costs, but where economic rivalry is also important, bundling allows firms to competitively cut prices while ensuring cost recovery. By including several products in a single offer, a firm can differentiate among groups or types of customers—that is, can price discriminate—to the benefit of consumers and overall economic efficiency.[10] This improves the ability of the firm to recover common costs in an efficient way—most particularly from those customers with the greatest ability to pay. Thus bundling makes discounting easier than it otherwise would be and hence more widespread. Price competition directly benefits consumers lowering prices and increasing output, better signals the costs of supply to consumers, and reduces efficiency losses imposed in the recovery of

10 ACCC, 2003, 6; NERA, 2003a, 8.

common costs. Astonishingly, this is true even for products that are completely unrelated.[11] In each of these respects economic efficiency is enhanced.

Bundling can also assist firms in stimulating customer take-up of new services, for example, where there is a complementary product that is necessary for the customer to purchase – say, a mobile handset, a broadband modem, or a computer - but which has a high upfront cost. If the supplier were to bundle the complementary good with the new service, this could encourage demand which would in turn help the firm to achieve economies of scale. There are a complex number of reasons why this may be efficient. For example, consumers may be more risk averse and less informed than the supplier. Thus consumers may not have a good idea of the benefit of the new product (for example, mobile or broadband service) so if a substantial upfront commitment is required on their part they may not purchase the new service, especially if they are risk averse. The producer, on the other hand, might have a good idea as to the likely benefits of its product to specific customer groups, may be able to reduce risk through sales to many customers, and simply may be less risk averse than its customers. By subsidising the upfront costs of the service and reclaiming these "losses" through usage, economic efficiency is enhanced.

In summary, bundling in all of its forms is widespread, including in highly competitive markets. Bundling in general is efficiency-enhancing leading to lower prices, better quality and greater output. Innovative bundling and packaging are an indication that competition is occurring and their absence would be a serious cause for concern. This is not the case for the telecommunications sector, where, as the next section shows, bundling is widespread.

2.3 Bundling in telecommunications

Bundling in telecommunications is ubiquitous in Australia and abroad.[12] In one arresting example, AT&T bundled Jiffy Lube oil changes with long distance services. AT&T's then

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11 See McAfee, *ibid*, 277-278, who provides examples of an oil change and telephony, a suit and a drill, and banking and a toaster. The theory of efficient bundling is provided in R. Preston McAfee, John McMillan and Michael D. Whinston, 1989, Multiproduct monopoly, commodity bundling and correlation of values, *Quarterly Journal of Economics*, 104 (2) May, 371-383.

12 As is recognised by the ACCC and NERA (see, for example, NERA, 2003a, 4; and ACCC, 2003, 2, 4-7).

chief executive officer, Michael Armstrong, described this as one of AT&T's most popular promotions.[13] In Australia, the Telecommunications Act 1991 generally prohibited Telstra from engaging in service bundling. By the mid-1990s, however, it was recognised that these provisions – though they certainly made life easier for Telstra's competitors – did nothing for efficiency or to promote genuine competition. As a result, the restrictions were dropped in the post-1997 regime. Since then bundling has increased as competition has spread across products. Other regulators have also relaxed or removed prohibitions against bundling.[14]

Bundling has not been solely driven by Telstra. Its competitors also find it attractive. For example, in as early as 1996, Optus bundled mobile services with long distance and pay TV installation with local calls.[15] Moreover, Optus has found bundling to be highly successful.[16] Austar has bundled mobile telephony with pay TV and Internet services since 1999.[17] Telstra, however, was a latecomer to bundling. It was not until 15 September 2000 that it offered discounts on mobile and fixed service bundles, and has only just begun to bundle pay TV with telephony.

The large degree of bundling observed in telecommunications is unsurprising given the substantial commonality of inputs (network assets and customer acquisition). Indeed, the direction of change in telecommunications technology has been towards convergence. That is, towards the supply of previously distinct services over common platforms, and towards the blurring of the borders that once made services distinct. As a result, competition will increasingly involve the definition of new services that combine and enhance the features and functionalities of services that were once distinct.

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13 Business Week, 16 October 2000, 60, cited in McAffee, *ibid*, 278 and footnote 20.

14 See, for example, in Canada (http://www.crtc.gc.ca/archive/ENG/Decisions/1998/DT98-4.HTM and http://www.crtc.gc.ca/archive/ENG/Decisions/2002/dt2002-48.htm); in the UK (http://www.oftel.gov.uk/publications/broadcasting/itc0200.htm, http://www.oftel.gov.uk/publications/1995_98/broadcasting/itc1297.htm).

15 http://www.accc.gov.au/media/mr1996/media2.htm

16 http://www3.optus.com.au/codocs/agm99.pdf; http://www.news.com.au/common/story_page/0,4057,5660554%255E15306,00.html.

17 http://www.internetnews.com/bus-news/article.php/365211

2.4 Bundling and concerns for competition regulators

The previous section illustrated the substantial benefits generated by bundling, and outlined its ubiquitous nature in effectively competitive markets and across most industries, including telecommunications. The Commission has made clear, for exactly these reasons, that it does not wish to discourage competitive bundling. To avoid such discouragement, it is important that the Commission's guidelines (1) are unlikely to forbid legitimate bundling as a result of casting too large a net, and (2) are not so vague as to deter bundling because firms are uncertain when bundling will draw the Commission's attention.

As discussed in more detail below, anti-competitive outcomes ***due to bundling*** can only arise where (1) a tie is implemented; (2) the tying firm has substantial market power in the tying product; (3) there is some complementarity or other link between the tying and tied goods so that either the tie had the effect of reducing rivals' addressable market to the point where supply by rivals was not profitable or the expected value of entry becomes negative if entry is forced in both the tying and the tied markets, rather than just the tied market; and (4) the tie lowers consumer welfare (so the tie can be said to harm competition). As a result, even if a tie with substantial market power over the tied good is demonstrated and the bundle is likely to have a substantial impact on the market, no simple test can be applied which determines whether the tie is *prima facie* anti-competitive. Such demonstrations require careful analysis on a case-by-case approach.

This is not to say that other forms of anti-competitive behaviour are impossible when tying does not take place—for instance, price squeezes and predation may still be plausible. Standard tests can be conducted for these—for example, the imputation test provides a rule of thumb for considering whether a vertically integrated firm is engaging in a price squeeze (discussed in Section 3), and a test which assesses whether prices exceed incremental cost can rule out predation.[18]

However, so long as either (1) all products are contestable at the retail level or (2) even if they are not, all products are also available unbundled (at prices that are competitive with the bundle, so there is not a constructive tie), bundling itself is not a cause for concern (though as

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[18] Predation is not directly dealt with in this note, but much of the discussion of a price squeeze applies to predation as the price squeeze can be thought of as a particular form of predation. In a price squeeze, a vertically integrated firm's upstream and downstream prices imply a margin that is below the incremental cost of the downstream service.

noted the prices of the bundle may be). If all products are contestable at the retail level, for example, due to regulated pricing of essential inputs, then, even if the vertically integrated firm creates a tie, it cannot have substantial market power over the tying good. Both the bundle and the tying good can instead be supplied by a competitor, for example, where relevant, by accessing the relevant essential inputs. In the second case, there can be no tie if all elements of the bundle are available independently at prices competitive with the bundle, whether from the bundling firm, or another firm. This is so by definition, since for a tie, the tying good must only be available in the bundle. However, if prices are such that consumers would never purchase the unbundled goods, a constructive tie exists. In this case, there may be a cause for regulatory concern if the tying firm has substantial market power over the tying good. If it does not, the only issue is again whether the bundle price is competitive or not, a matter dealt with through tests for predation and price squeezes.

For most of the recent past,[19] even tying by a firm with substantial market power over the tying good has not generally been considered, at least by economists, as a likely means of anti-competitive conduct. At its simplest, the view was that market power in one market could not readily be leveraged into another—there was only one monopoly profit. Instead, a range of other mostly efficiency-enhancing explanations seemed more plausible explanations

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[19] This was the tradition certainly since the late 1970s (RA Posner, 1976, *Antitrust Law: An Economic Perspective*, Chicago: University of Chicago Press and RH Bork, 1978, *The Antitrust Paradox*, New York: Basic books) if not earlier, though the view was first published by Aaron Director and EH Levi, 1956, Law and the future: Trade regulation, *Northwestern University Law Review*, 51, 281-296. This view is strongly reflected in Klein, *ibid*, despite being written in 1998.

for tying.[20] This view, however, has begun to change with the publication of a handful of papers that suggest tying can be used, in some circumstances, to anti-competitive effect.[21]

The basic gist of one set of these models,[22] putting aside any efficiency-enhancing effects of tying, is that (1) tying reduces the part of the tied market that is addressable by the tying firm's rivals, and so (2) exit can be forced if the remaining market lies below the rival's minimum efficient scale. In this sense, these models are more plausible extensions of Rasmusen's naked exclusion,[23] where the same effect is obtained simply by contracting in advance.[24] In the tying models, firms with market power in one market wishing to gain or preserve dominance in a complementary market, do not have to convince buyers to sign with them, but manage this through the tie. The extent to which consumers are compelled to purchase the tied bundle measures the capacity the tying firm has to reduce the demand addressable by the tying firm's rivals.

While these models demonstrate an anti-competitive tie may be profitable, they do not show such behaviour to be common. Indeed, if tying could easily accomplish such an extension of

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20 The efficiency improving motives for bundling, including tying, were canvassed in Section 2.2. Bundling may additionally be used to avoid price regulation or as a means of more effectively using market power in the tying market through price discrimination (but not as a means of extending that market power into a second market). A famous example of avoiding regulation comes from Melbourne's Sunday trading laws. Books were allowed to be sold, but not billiard tables. Thus on Sundays it became possible to buy a several thousand dollar paperback book… along with a free billiard table.

21 For example, Michael D Whinston, 1990, Tying, foreclosure and exclusion, *American Economic Review*, 80 (4), 837-859; Dennis W Carlton & Michael Waldman, 1998, The strategic use of tying to preserve and create market power in evolving industries, *NBER Working Paper 6831*; Jay Pil Choi and Christodoulis Stefanadis, 2001, Tying, investment and the dynamic leverage theory, *Rand Journal of Economics*, 31 (1) Spring, 52-71.

22 For example, Whinston, *id*, and Carlton and Waldman, *id*.

23 Eric Rasmusen, J Mark Ramseyer and John S Wiler Jr, 1991, Naked Exclusion, *American Economic Review*, 81(5), 1137-45.

24 The difficulty with naked exclusion is why customers and rival firms are not in a good position to organise contracts that pre-empt monopolisation, improving their own situation.

profit, one would expect monopolists to regularly seek to tie their products with other, often quite unrelated products. The possibility of anti-competitive tying in these cases depends crucially on the particulars of any given situation, most particularly the extent to which the tie can reduce demand in the tied market relative to the tied markets minimum efficient scale. Thus, for a tie to be plausible it is necessary to demonstrate the capacity to reduce demand in the tied market and materially link this to rivals' ability to compete in that market.

The second plausible form of an anti-competitive tie is due to Choi and Stefanadis and relies on the risks of innovation. Their model considers entry due to research and development replacing an existing monopoly. Such innovation is risky as the necessary research effort will not always be successful. In their model, a firm contemplates entry in the supply of a particular component of a system (for example, of a word processor), but views entry to replace the entire system as being too risky. Thus, an incumbent could prevent competition by tying, since this forces the rival to choose system-wide entry. Again the extent of the complementary relationship between the tying and tied goods is central to the plausibility of an anti-competitive tie. However, in this case rather than reduce demand relative to the minimum efficient scale, the tie forces an increase in the scale of entry. Thus, the extent to which the expansion of entry lowers its expected value is also critical.

As an example consider a computer operating system and word processor monopolised by the incumbent. It can be shown that while entry into the word processor market might occur absent a tie, the incumbent might be able to prevent entry by tying its own word processor to its operating system. When facing a tie the entrant must enter both markets simultaneously, but this may sharply increase the risks the entrant faces (as it must succeed at two endeavours rather than one). As a result, the entrant may prefer not to enter.

Assume the entrant estimates: it would cost $40 to enter the word processor market; the probability of success is 50%; and that success would generate $100 in profits. The expected value of entry is $10 (50% * $100 - $40) and the entrant would wish to enter this market.

However, if the incumbent forces purchasers of its operating system to also buy its word processor, then entry by word processor alone could be prevented. Assume the entrant estimates that entry into the operating system market is identical to entry into the word processor market. If the probabilities and costs of entry are independent, then entry into both markets will not occur. The probability of succeeding in both markets simultaneously is 25% (50%*50%) at a cost of $80, but the gains are only $200, so the expected profit due to entry is -$30 (25% * $200 - $80) and entry will not occur.

Of course, the actual costs and probabilities are of central importance to this result. If, as one would expect, there were economies of scope between the two markets, joint entry costs

might be less than separate entry and the probability of joint success might be higher than the probability of two independent successes. Thus tying might simply lead to entry in both markets.

In summary, bundling without a tie is not *per se* problematic, nor does a tie create any difficulties so long as the tying firm does not have substantial market power in the supply of the tying good. Further, whenever all relevant inputs are not essential and/or essential inputs are available at regulated prices, the tying party cannot have substantial market power over the tying good. Subject to the price of the bundle not being anti-competitive, any efficient firm can enter by supplying the bundle, and if no firm can enter with a smaller bundle, then less bundled supply is not efficient. Thus, if input availability is guaranteed, what must be tested is price related: whether the bundle price is predatory or involves a squeeze.

It may be possible to effect an anti-competitive tie if the bundle supplier has substantial market power over the tying good and there are sufficient complementarities between the tying and tied good. Whether an anti-competitive tie can actually occur cannot be determined except through careful examination of the specific situation. To establish this, both the exact means of damaging competition and the degree to which the tie increases efficiency must be ascertained.

3 Imputation testing

3.1 Purpose of imputation testing

A vertical price squeeze occurs when an efficient downstream competitor[25] that purchases an essential input from a vertically integrated firm cannot profitably compete in a downstream market in which the vertically integrated firm also competes. The imputation test is a tool that is used to determine whether a vertical price squeeze is occurring. It determines whether supply is profitable to the vertically integrated firm after "imputing" back to it the essential input charges. If so, efficient firms can compete with it. For example, in applying an imputation test to Telstra's long-distance call prices, Telstra's retail margin would be calculated on the basis that it pays itself the PSTN originating and terminating access charges faced by efficient access seekers. If the margin over the essential input charges and the efficient costs of downstream supply[26] (excluding the cost of the essential input) is non-negative then the integrated firm is not engaging in a price squeeze.[27]

The imputation test is recommended by many distinguished economists,[28] is widely-used by regulators,[29] and has support from court decisions,[30] and is given by:

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25 A firm that produces downstream output at the least possible cost given input prices.

26 Efficient costs of downstream supply are, given input prices, the least possible cost of downstream supply and are the lower of the avoided costs of the vertically integrated firm and the costs of the most efficient downstream firm.

27 As will be discussed in section 3.2, the imputation test is a conservative approach to vertical price squeeze assessment in that it uses the costs of the vertically integrated firm, which may not be efficient.

28 See for example, AE Kahn and WE Taylor, "The pricing of inputs sold to competitors: A comment," *The Yale Journal on Regulation*, 11, 1994, 225-240, 227-228; JA Hausman and TJ Tardiff, "Efficient local exchange competition," *The Antitrust Bulletin*, 40 (3) Fall 1995, 529-556, 543-545; Dennis L. Weisman, "Access pricing and exclusionary behaviour", *Economic Letters*, July 2001, 72(1), 121-126; and NERA, 2003b, 22. All of these writers recommend exactly the test outlined in body of text immediately following.

$$P \geq A - CS + C$$

where: P is the retail price of the product

A is the wholesale input price that the integrated firm charges rivals

C is the cost of converting the input into its end product

CS is the cost savings of providing the input internally rather than to rival firms. If internal supply of the input is cheaper than supplying the input to third parties, then the cost saving, CS, must be included as the relevant benchmark is efficient costs.

Imputation tests are relevant where a downstream firm must purchase inputs from the vertically integrated firm to compete with the vertically integrated firm downstream. A price squeeze may apply to a single product, a bundle, or any combination of single products and bundles. Imputation tests assess whether the vertically integrated firm is anti-competitively favouring itself in the supply of the essential input. For example, a negative margin on the imputation test implies that the firm may be supplying the essential input to itself on more favourable terms than to access seekers.

Given the important role that imputation testing will play in evaluating bundles, it is essential that the Commission provides a clear statement of the imputation test methodology that they expect to apply.

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29 Aside from the Commission's own recommendations (ACCC, 2003, 15-19), regulators that have used a version of the imputation test consistent with that described here below include the European Commission, ART in France, OFTEL in the U.K., at least several public utility commissions in the U.S. and on occasion the CRTC in Canada. Appendix A provides details.

30 Courts that have used tests very similar to the imputation test described here include the European Commission in *Napier Brown – British Sugar*, Case No. IV/30.178, (88/518/EEC)18 July 1988, http://europa.eu.int/eur-lex/en/lif/dat/1988/en_388D0518.html and the U.S. Court of Appeals in United States v. Aluminum Co. of America, 148 F.2d 416.

3.2 Limitations

The effect of imputation tests is to establish a retail price floor for the vertically integrated firm. It is crucial that the price floor be set correctly. A price floor that is set too high would distort competition, for example, by preventing the vertically integrated firm from efficiently cutting price, and if it is set too low, anti-competitive behaviour will not be prevented. Consequently, it is important that the methodology be carefully selected so as to minimise such distortions. A number of the key methodological issues to consider are discussed in section 3.3.

Not only is it important that the methodology for applying imputation tests be carefully selected, it is also crucial that imputation tests only be used when applicable. Imputation tests should only be applied when (1) the vertically integrated firm supplies an ***essential input*** in the upstream market, and (2) when barriers to entry in the downstream market are significantly increased after the squeeze. These two criteria are now discussed in detail.

An input is essential if it cannot be economically supplied by any except the regulated vertically integrated firm. Absent the essentiality of the input, the vertically integrated firm has no substantial market power over it. As a result, it cannot use the input to engage in a price squeeze or any other form of anti-competitive behaviour.

If there is no significant increase in entry barriers to the downstream market after the squeeze has taken place, then a vertical price squeeze strategy would not be effective and hence rational for an integrated firm. As discussed by NERA, for a price squeeze to be rational, after squeezing competitors out of the market, the integrated firm needs to be able to raise prices above what would otherwise have occurred absent the squeeze without inducing entry.[31] If firms are able to enter the market, the price increase will be defeated and the price squeeze will result in a net loss of profit relative to the situation where the integrated firm set its prices consistent with passage of the imputation test.

Moreover, with no change in entry barriers, a squeeze makes consumers better off. The squeeze initially lowers retail prices. Subsequently retail prices must return to the same level that would have obtained absent the squeeze, as any attempt to raise price after the squeeze is abandoned would be constrained by entry or expansion by existing suppliers.

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[31] NERA, 2003b, 10-11.

The implications of a negative imputation test margin must also be understood. While a negative margin is suggestive of a squeeze, it does not necessarily imply that the vertically integrated firm is engaging in such anti-competitive activity for at least two reasons:

1. The imputation test can understate the margin available to efficient competitors because it uses the costs of the integrated firm. Using the vertically integrated firm's own costs is simple because the identity of the vertically integrated firm is not in doubt (while the identity of the truly most efficient firm might be). This is valuable both to the regulator and the vertically integrated firm (the latter can test proposed prices against its own costs). As a result, the choice to use the vertically integrated firm's costs minimises empirical estimation. Nonetheless, and importantly, it means that the failure to pass an imputation test is a necessary but not sufficient condition for prices to be considered anti-competitive. It may be that efficient costs are lower than those of the vertically integrated firm and hence prices are not anti-competitive. This possibility should be considered when a test is failed.

2. Prices may be set below costs for legitimate reasons, for example, when a new product is being introduced, or for the purposes of advertising (a loss leader), or when Telstra's prices are dropped to levels that match those of a rival (in many cases even if this implies prices that are below the responding firm's own costs, as the cost of failing to meet competition may exceed the cost of temporarily running a loss). Such legitimate purposes must be ruled out before a squeeze can be said to have been implemented.

3.3 Methodology

Issues that NECG consider to be particularly important in the implementation of the imputation test are:

- The choice of the cost measure;
- The choice of the relevant input, where there is more than one option available to access seekers; and
- The relevant scope of the test – that is, what range of services should be included in the test.

3.3.1 Relevant cost base

Imputation tests are intended to provide a straightforward way of identifying the likelihood of a price squeeze. The imputation test works by determining whether the margin between

upstream and downstream prices is sufficient to cover the efficient costs of downstream production (excluding the costs of the essential service—the price paid to the vertically integrated firm). In this light, estimation of the cost of downstream service is central to undertaking an imputation test. If the wrong estimate of costs is used, then the imputation test will not indicate whether the margin is sufficient to ensure the viability of an efficient firm.

In this section the appropriate measure of downstream costs is shown to be the costs the vertically integrated firm avoids due to efficient supply to its downstream rivals. These avoided costs are equivalent to the incremental cost of supply of the same downstream service exclusive of the costs of (or fees for) the essential input. It is additionally shown that use in imputation tests of average or fully distributed or marginal cost[32] measures is inappropriate.

In economics, efficient costs in production are measured by the minimum amount of resources necessary to supply the output in question. Prices send efficient signals to consumers and producers when they are sufficient to cover efficient costs. Avoided costs are used in imputation tests as a proxy for efficient costs because they are the only costs that the vertically integrated firm must incur to supply the downstream output. While the vertically integrated firm's avoided costs may not be fully efficient,[33] any higher measure of costs would be more inefficient. Counting additional costs would require the vertically integrated firm, if it wanted to pass an imputation test, to set downstream prices that exceed efficient costs. This would:

- unnecessarily harm consumers, lowering output below economically efficient levels;
- allow entry by inefficient firms, that is, firms that must use more resources than necessary to supply the same output generating waste in production; and
- distort investment by the vertically integrated firm. Consider the case where Telstra is looking at investing in a new service and the demand for that service is uncertain and likely to be price sensitive with high start-up costs. If the relevant price floor was set

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32 The cost of an additional unit of output.

33 The vertically integrated firm's avoided costs can overstate, but never understate, efficient costs. While ideally, efficient costs should be used, for simplicity, the vertically integrated firm's avoided costs are used. See the discussion in Section 3.2.

using an incremental cost approach it could be low enough to stimulate the take-up required to justify a roll-out of the new service,[34] whereas if the price was set on the basis of average costs it would not.[35]

Using average, instead of avoided, costs is problematic. Average costs are not defined for any bundle of services except those where all the services within the bundle are consumed in the same fixed proportions. However, there would be few if any services bundled in telecommunications that are consumed in fixed proportions. Fully distributed cost measures, which can be thought of as more broadly defined average costs, are also problematic, being highly arbitrary. Their use could result in conflicting imputation tests depending on the chosen fully distributed cost allocation key. For example, international calls are differentiated by termination network and time-of-day. When this is true, an average cost for international calls does not exist. Instead, a fully distributed cost estimate must be relied on.

Without an agreed upon fully distributed cost key, an almost entirely arbitrary range of imputation tests could be undertaken, some showing no squeeze and others showing a squeeze. Moreover, enforcing a given fully distributed cost key, for example, that as determined by the record keeping rules (RKRs), only reduces the number of possible tests (at least to the extent the key does not vary substantially over time). The chosen key remains arbitrary. But, the idea of an agreed upon or enforceable fully distributed cost key is itself illusory. It is open to any party to argue in legal proceedings that the RKR allocations are not correct and alternative allocations are to be preferred, or more sensibly, that fully distributed cost approaches should be abandoned altogether and the economically defensible measure of avoided costs be adopted instead.

Perhaps more importantly than the previous technical niceties, average and fully distributed cost approaches, even when accepted, are likely to damage economic efficiency. In an industry like telecommunications, which is characterised by economies of scale and scope, average and fully distributed costs are in general higher than avoided costs and hence are

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34 In some instances, even the incremental cost floor would likely be too high. It is common in competitive markets for new products to be introduced below cost, for example, to enable the supplier to gain economies from "learning by doing" as well as efficient means of transferring risk and signalling information.

35 Using a cost measure that was below efficient costs would also generate inefficiencies, though different to those outlined here. As this is unlikely it is not considered further.

higher than the least cost of provision. Using higher costs than avoided costs generates the inefficiencies outlined in the three dot points immediately above. NERA concurs, writing that "there are many circumstances where a price below average cost is privately rational and socially desirable (ie, consistent with competitive market behaviour)."[36] In addition, NERA notes that use of average costs in imputation tests places regulated firms in an invidious position. The regulator is typically concerned to prevent firms' unit revenues from exceeding average costs, but passage of an average cost based imputation test requires that its revenues exceed the same!

In moving on to consider use of marginal costs[37] in imputation tests, it will be helpful to first outline a disagreement NECG has with NERA. NERA considers an advantage of average costs is that they are:

> "based on a longer-term measure of costs" and that "[efficient f]irms will not be deterred from entering a market [if]… prices (on average) [are]… at least as high as the average total costs of an efficient firm… Average total cost based tests may therefore be useful for ex ante testing (where, for example, the Commission is asked to approve proposed pricing arrangements that are intended to last indefinitely)".[38]

NERA is mistaken in this—average costs have all the problems already outlined and are inefficient for these reasons, including that they distort investment. Despite this, NERA's view does raise an important concern—that the imputation test should provide incentives for efficient investment. In fact, properly executed, imputation tests will do exactly this and NERA's discussion here perhaps reflects a confusion between marginal and avoided costs or at least a misunderstanding of the full implications of using avoided costs.[39] It is true that if

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36 NERA, 2003b, 20.

37 The cost of supplying and additional unit of service.

38 NERA, 2003b, 20.

39 NERA contrasts imputation tests based on marginal costs with those based on average costs throughout its report (see, for example, NERA, 2003b, 2-3, 5-6, 21) and almost uniformly uses the language of marginal cost rather than avoided or incremental cost in describing the tests (see especially 14-19 where this language is used even though what is meant by marginal cost explicitly is avoided or incremental cost).

the marginal cost of a service is used in an imputation test, the implied margin between downstream and upstream prices is unlikely to encourage efficient investment, at least in telecommunications where economies of scale and scope are so prevalent. Indeed, this is likely to be true for the cost of any increment of service that is less than the increment to be (or actually) supplied by the vertically integrated firm's rivals. However, avoided costs are not marginal costs and properly measured avoided costs fully account for all the shared costs of supply.

In undertaking an imputation test, the relevant costs are the downstream costs the vertically integrated firm avoids or can be expected to avoid ***due to supply by its downstream rivals***. Thus it is important to consider the full extent of entry, across services, geographic areas, customer groups and time frames. This increment of output is what is relevant and its cost—measured by the costs the vertically integrated firm would avoid (see Section 3.2)—is the relevant incremental cost. Once this is estimated, the margin between output and input prices can be established. Such a margin allows for all the shared and common costs of the increment over all supplied services, geographic regions, consumer groups and time periods. If a firm can efficiently supply that increment, either by entirely new entry or by expansion from other telecommunications supply, then it will enter the market, but otherwise will not.

NERA also claim that "the marginal cost [by which they mean incremental cost] based test may permit price squeezes against smaller rivals who are equally efficient in terms of average total cost but have a cost structure in which a higher percentage of total costs is variable."[40] They are also mistaken in this, as can be shown by use of their own illustrative example, which follows:

> "For example, suppose the vertically integrated firm and the new entrant were competing for 100 units of volume. Suppose further that the former has an "average cost" of $1 per unit, consisting of a variable cost of $0.50 and an additional assignment of $0.50 of fixed costs shared with other services, while the entrant has a cost of $1 per unit consisting entirely of variable costs. Then the total additional variable costs incurred by the vertically integrated provider would be $50 and $100 respectively."[41]

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40 NERA, 2003b, 18.

41 NERA, 2003b, footnote 25 at 19.

As NERA sees it, with the marginal cost equal to 50 cents, a price of more than 50 cents and less than $1 could be legitimately charged under the incremental cost criterion, but the equally efficient competitor would be excluded, hence a test based on incremental costs should not be used in this case. This is mistaken. At the price of more than 50 cents and less than $1, either (1) the price of the overall bundle (upstream plus downstream products) is *prima facie* predatory because absent sunk costs (which NERA do not postulate in their model) total costs are not covered (a competitive firm would usually seek to cover the costs of all increments of output), or (2) the incumbent's costs are lower than the entrant's (so the entrant is ***not*** efficient) and are covered because at the lower price volume expands so the price is not predatory. In the former case, the price squeeze test is not relevant, rather a test for predation is. In the latter case, no anti-competitive behaviour occurs. The vertically integrated firm lowers prices to consumers because it is more efficient than its rival. An equally efficient firm is not excluded.

The choice of the relevant cost base is not simply a theoretical debate but one that will have very real impacts on competition and end users. The use of average costs will work to the detriment of end users.

In situations where competitive forces result in prices that are below average costs, Telstra will to be required to hold its prices above its competitor to meet the average cost price floor. To the extent to which prices in some markets have already been driven below average cost by competition, Telstra would need to increase its current prices.

Two possible effects, perhaps in combination, could occur from Telstra having to price at or above average cost: (1) Competitors increase their prices to the point where they are just below Telstra's price floor. This is all the more likely if there is disclosure of the record keeping rules (RKRs) information as this would enable rivals to calculate the retail price floor Telstra faces and could serve as a tacit focal point for pricing in this market, facilitating a collusive outcome in which the prices would be considerably higher than the prices that would be expected in a competitive market.[42] (2) to the extent that competitors' prices do not rise, perhaps due to the strongly competitive nature of the market even absent Telstra as a price competitor, Telstra would be prevented from competing for the service. Further, there

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42 While this would result in higher prices, these likely would be of less advantage to Telstra than its competitors. While Telstra would be unable to appropriately respond to price cuts by its rivals, they would be in a position to price below Telstra, but above the levels that would obtain absent data publication.

may be flow-on effects to other services. For example, it would lock Telstra out of competing for customers whose choice of telecommunications provider was largely dependent on the service in question. The damage to Telstra's share market price in this case would be substantial.

Consider also the difficulty of Telstra's position. The Commission states that where there are prices that fall into the grey area (pass the marginal cost test but not the average cost test), other issues would need to be considered. This leaves Telstra with little guidance as to how far it could reduce prices below what is required for passage of the average cost imputation test. A natural consequence is that Telstra would be overly cautious in its pricing, with the result that its customers would face higher prices. This would particularly be the case if Telstra were considering a price-leading initiative rather than simply matching competitors existing prices, or in circumstances where it does not have visibility of competitors' prices (for example, in bidding for the business of large corporates).

The Commission's approach of using a grey area could also discourage investment in new services. The likelihood of weak initial demand for new products coupled with a high retail price floor may prevent Telstra from generating sufficient customer take-up for new services to justify product launch. Demand for new services is often highly elastic, and risk-averse consumers would be particularly concerned about making outlays when the service was entirely new and largely unknown. Moreover, Telstra could be sure that its start-up costs would be high as it would not have the economies of scale later penetration levels would allow and it would be learning-by-doing. Thus, even accounting for the fact that costs would be allocated arbitrarily over time as well as products, Telstra could be confident that the average cost test would impose quite high prices. It may be the case that the necessary pricing point to kick-start the market is so far below the likely average cost imputation test level, that the risk of regulatory intervention with harsh implications would be too high and that Telstra would therefore decide against investing in the new services.

3.3.2 Choice of input

An issue that is not mentioned in the NERA papers or in the Information paper is the choice of input that should be used in the imputation test.

The imputation test examines whether an *efficient* firm could secure a positive margin when competing against the retail prices of the vertically integrated firm. It should be of no concern if a firm uses inputs inefficiently and an imputation test, as applied to that input use, fails. This would simply demonstrate that an inefficient firm could not compete against an efficient vertically integrated firm. The inefficient firm would indeed likely be harmed in this circumstance, but by the ordinary forces of competition.

An efficient firm seeks out and obtains all available opportunities to reduce costs. When there is a range of possible inputs that can be used these must be considered in constructing the imputation test. For example, in Australian telecommunications markets, rivals have a range of inputs available to provide retail services. For example, in supplying local calls firms can use regulated services such as originating and terminating interconnection services, unconditioned local loop services and the local call resale service. In addition to this, firms can also use unregulated services offered by other carriers such as leased line services or firms can deploy their own infrastructure.

Consider an illustrative example where, the input costs of originating the traffic of large corporate customers in central business districts is:

- $200 per subscriber line or when a firm uses regulated interconnection services; and
- $100 per subscriber line when a firm uses a combination of its own switches and multiplexers and the incumbent's unregulated leased line services.

In this example, the appropriate input for use in the imputation test is that associated with leased lines. This is the most efficient method of providing services to large corporate customers in the above scenario. If a firm could secure a margin given the incumbent's retail price offerings for large corporate customers based on an origination cost of $100, then the imputation test is passed and there is no price squeeze.

3.3.3 Relevant scope of tests

In telecommunications, firms typically supply a plethora of retail services, depending for example, on the point of call origin and destination and time of day or even week. In conducting an imputation test, a regulator must decide what retail price is relevant. For example, at one extreme, an average retail price could be estimated for all of the vertically integrated firm's outputs. At another extreme, the price of a very narrow service, such as calls between Sydney and Melbourne between 2 am and 3 am on a Sunday morning, could be used. In NECG's view, the test must be applied to the arena in which competition occurs. In particular, the imputation test must be assessed at no level of disaggregation lower than the smallest entry decision or output choice offered by the pricing firm. This is because the imputation test is designed to ensure that firms are able to make efficient entry and supply decisions. Any examination of prices for consistency with the imputation test should occur at a level of aggregation that has a material impact on how firms make these decisions.

In any market some customers or services may not be "profitable", but it may be more expensive to seek to exclude such customers or services than to serve them. For example, calls from Sydney to Melbourne between 2 am and 3 am on a Sunday morning may be

unprofitable if supplied on their own, but when offered within a wider package of services it is more profitable to include these calls than to exclude them. Entry remains justified if these "losses" are merely part of the price the firm pays for "profits" made on other customers and services, and such profit cannot be otherwise obtained. It is of no bearing that higher profit could be achieved if certain customers and services could be excluded when they in fact cannot be.

In NECG's view, the competitive arena is the greater of the market or the service bundle offered. In some cases the competitive bundle will be broader than the market and so the bundle becomes the effective unit of analysis. In other cases, individual marketing decisions may be made below the level of market (e.g., customer service and loss leaders). In such cases, the relevant unit of analysis becomes the market itself.[43] For example, if the vertically integrated firm is offering a package of services that cross market boundaries, then the relevant retail price to use in the imputation test is the average price for the package of services.[44] So long as the retail price offered by the vertically integrated firm for the package of services is sufficient to enable an efficient operator to secure a positive margin, then the imputation test is passed. Similarly, the average of the vertically integrated firm's retail prices is relevant if it offers numerous packages, all of which are contained in a single market. For example, if the relevant market is for domestic long distance service and the firm offers different rates on different call types, even if unbundled, then its average revenue over all long distance services is the relevant retail price. In this way, pricing mechanisms that are common to competitive markets such as a loss leader—say capped calls in the evening peak hour—cannot be singled out as being in violation of the test.

In this vein, the eminent regulatory economist Alfred Kahn[45] notes, in analysing US anti-trust laws:

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[43] Occasionally, the bundle may contain items that are competitively supplied, and others that are not. In this circumstance, the arena of competition is for those items supplied competitively, that is, it is below the level of the bundle.

[44] Average is used loosely here. The relevant price is the "avoided" revenues, that is, the revenues the vertically integrated firm would have earned if it had supplied, at its own prices, the retail services supplied by its rival.

[45] Professor Kahn is a Professor Emeritus at Cornell University and a Special Consultant to NERA.

> "As the identity between this requirement of the imputation or efficient component pricing rule ("ECPR") and the proscription under the antitrust laws of predatory squeezes clearly suggests, application of this test calls first for an economically correct *definition of the relevant market*. Does it mean, for example, that SAI (the proposed unregulated retail subsidiary) would be required to satisfy the test for every single one of its prices of every single one of its separate services – for local calls under measured service after 6:00 pm, for example? Or interLATA calls? The answer is *absolutely not*. SAI should be no more subject to such a restriction on each of the individual components of the packages of services that it offers customers than its rivals – than AT&T is or should be, for example, with respect to its 5 cents a minute charge for interLATA toll service in Connecticut, a price that could clearly not, considered separately, satisfy ECPR, since the access charges it pays to an ILEC like SNET for such calls, at originating and termination ends, alone add up to about five cents a minute.
>
> The "relevant market" – to which the ECPR, identically with the antitrust proscription of anti-competitive squeezes, would apply – must embrace the entire range of services in the sale of which SAI and its rivals compete or could readily compete. For example, interexchange carriers offer residential and business customers a complete package of toll calling service, over various distances and times of day. Accordingly, the SAI retail charge or charges to assess would be its entire schedule of toll charges for the group of services to particular customer groups for whose patronage it is competing. That is the price that competitors for that business have to meet; the relevant question is whether SAI makes money in providing that package to that group of customers, after meeting the imputation requirement."[46]

In sum, there can only be a price squeeze if the retail price of the package of services is insufficient to allow an efficient rival to secure a positive margin. The fact that a rival may not be able to secure a positive margin on any one of the individual services in the package is irrelevant, as what is being contested is the bundle or market as a whole. Therefore, it is important that the retail revenues used in the imputation test accurately reflect the level at which competition occurs. If the imputation test is applied either too broadly or too narrowly, the results will be meaningless.

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[46] DPUC Investigation of the Southern New England Telephone Company Affiliate Matters etc., Docket No. 94-10-05.

3.4 Disclosure of RKR cost information

The Commission currently collects, on a regular basis, comprehensive information on costs, revenues and usage from Telstra, Optus, Vodafone, AAPT and Primus. In addition, a rigorous form of accounting separation is imposed on Telstra. The Commission is now considering disclosing the costs information collected under the record keeping rules (RKRs).[47] Disclosure of Telstra's costs is likely to reduce, rather than enhance competition.

If the collected RKR data is made public, it will greatly improve the capacity of firms in the industry to engage in tacit collusion at both a cost to Telstra and the community at large. The average cost approach to the imputation test places an unnecessarily high floor on Telstra's capacity to cut price. Even if this floor is not known with a reasonable degree of accuracy it reduces the effectiveness of one of the most important competitors in the telecommunications market and this will impact on the willingness of other firms in the industry to cut price. However, publishing the RKR imputation test data will provide, as the Commission accedes,[48] Telstra's rivals with the ability to know, with a high degree of accuracy, exactly how low Telstra can cut its prices. This would become a natural focal point for the remaining firms in the industry. For example, one form of tacit collusion would be to undercut Telstra by a relatively small amount, and share Telstra's eroding market among themselves.

47 ACCC, 2003, 20-22.

48 ACCC, 2003, 21-22.

4 Issues in the Commission's Discussion Paper

4.1 Process for analysing bundles

The Commission identifies two key elements that will form a part of its assessment of bundling:

> "While the Commission will assess bundling conduct on a case-by-case basis there are two key elements which will form a part of the Commission's anti-competitive conduct or authorisation/notification considerations. These are:
>
> > whether the bundling conduct significantly reduces the "addressable market" of competing carriers or CSPs, such that equally-efficient competitors are unable to compete on their own merits; and
> >
> > whether the price(s) for the bundled services involves predatory pricing or a vertical price squeeze." (p. 13)

It should, however, be noted that where authorisation, notification or exemptions are considered, an efficiency defence is also possible.

The Commission also states that bundling is only likely to raise concerns of being anti-competitive where the firm has market power in the supply of at least one of the bundled products.

NECG agrees that all three issues (the assessment of whether the addressable market is reduced, the application of price squeeze or predatory pricing where relevant, and the assessment of market power) are central to assessing bundling conduct. NECG recommends that the Commission set out the steps that the Commission will generally follow in its analysis, so as to provide further clarity on the process that the Commission will use. While NECG appreciates that analysis of bundled offers ultimately will be carried out on a case-by-case basis, it would be valuable to provide an identification of the key steps in the decision-making process. This would give a framework for the Commission's analysis and for the internal processes of telcos in developing bundles and pricing the same.

NECG recommends that the decision-making process described in Figure 1 be adopted. This process brings together the market power, addressable market and imputation test assessments.

As alluded to by the Commission, the first step in the analysis of a bundled offer is an assessment of whether the firm offering the bundle has substantial market power over the

supply of one of the products contained in the bundle. In the absence of substantial market power, the bundle is highly unlikely to have an anti-competitive effect.

If the firm has substantial market power in respect of at least one product in the bundle, then the second step is the analysis of the percentage of the addressable market that is affected by the offer. As described by the Commission, what is of interest in assessing bundling conduct is whether it will have the effect of ***significantly*** reducing the size of the competitors' addressable market. If little or no effect is likely, then it is unlikely the bundle could ultimately damage downstream competition and no anti-competitive effect could take place.[49] While it is difficult to define specifically what percentage reduction in the addressable market would be considered "significant" in all cases, the economic literature provides, as a guiding principle, that a reduction in the addressable market only be of concern when it has the effect of creating a barrier to market entry through minimum efficient scale.

If the bundle will be taken up by a significant proportion of the market, then the next step in the process is to determine whether all essential inputs required to provide the bundle are available. If so, the act of bundling itself is not of concern, but rather the relevant competition issue is whether there is a vertical price squeeze or predation. Given that all components of the bundle are contestable, the imputation test or predation test should be conducted in aggregate across the group of services contained in the bundle. In the case where an imputation test is considered relevant, then if the imputation test is passed it can be concluded that the bundle would not result in a substantial lessening of competition. If the imputation test is not satisfied, then other considerations should be taken into account (as described in Section 2.4), such as whether the avoided costs used in the test exceed efficient costs and whether the negative margin is a result of a loss-leading strategy. Similar considerations apply with respect to the predation test.

If instead, the bundle contains at least one product for which an essential input is not available, but any such products are available for individual purchase outside of the bundle at prices that are competitive with the bundle, so there is not a constructive tie, then the imputation test or predation test, whichever is relevant, is applied to the implied price of the product or group of products that are contestable. As above, if the test is passed then the bundle would not result in a substantial lessening of competition, and if it fails other considerations would need to be taken into account.

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[49] This would also cast doubt on whether any anti-competitive intent could be found.

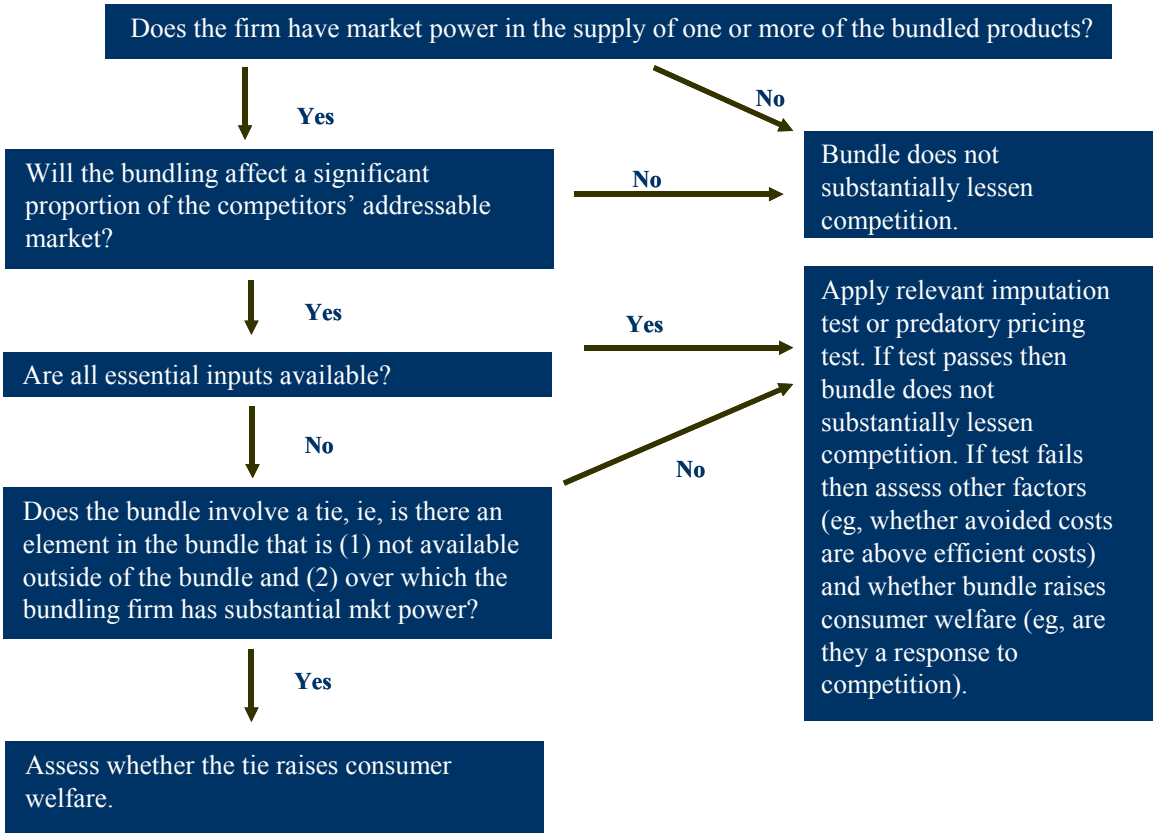
Finally, if the bundle is a tie, that is, the tying product is only and can only be available through purchase of the bundle, then the assessment of whether it will substantially lessen competition consists of a consideration of other factors including whether (1) the supplier of the bundle has substantial market power, and (2) there is some complementarity or other link between the tying and tied goods, (3) with the likely effect of substantially lessening competition.[50] If (1)-(3) are true the only "defence" (through authorisation, notification, or an exemption order) for a breach of s. 45, s. 47 (tying with substantial market power may be construed as exclusive dealing) and Part XIB (breach of the competition rule) of the *Trade Practices Act* 1974[51] is that the tie raises consumer welfare (so while competitors may be harmed, competition is not). Actions in pursuit of increased efficiency, even if having the effect of damaging competition are likely not in breach of s. 46, but given tying is under discussion, would still be covered by the other relevant sections.

In the case where the tying firm applies for an exemption order or for authorisation or notifies the conduct as exclusive dealing, a public benefit test, which is primarily concerned with economic efficiency, applies. Thus the tying firm has the option of demonstrating the tie to be efficiency enhancing.

Figure 1: Decision-making process for analysing bundles

50 A demonstration of the likely effect of substantially lessening competition is not necessary in the cases of third line forcing (s. 47 (6), (7), (8)(c) and (9)(d)).

51 This also applies to s. 50, though not relevant to bundling.



4.2 Average (fully distributed) cost versus incremental cost

In practice, the use of average (fully distributed) costs is likely to cause substantial distortions.[52] The Commission's proposed approach of using a grey area is likely to cause substantial uncertainty and, to the extent that it does not ultimately rely on an incremental cost standard, will result in distortions as well. A safe harbours approach may have been appropriate in earlier stages of a liberalised telecommunications industry because a fully distributed cost approach was possibly simpler and margins were so large it was unlikely a price squeeze would be falsely found. However, in the situation of Australia, where there are a number of established players and competition is well advanced, such a test is likely to be too conservative and would create more problems that it would solve. Avoided costs are the only economically sound costs that can be used in this context. These are the downstream costs avoided by the vertically integrated supplier due to the supply of its downstream rivals

[52] See Section 3.3.1.

or, alternatively and equivalently, the incremental costs of downstream service excluding the price of the essential input.

5 Conclusion

Bundling in telecommunications is widespread and is set to expand. While there are a host of efficiency reasons for bundling, it remains the case that bundle prices or ties could have anti-competitive effects. By publishing clear guidelines as to how the Commission will treat bundling, it provides certainty enabling industry participants to run their businesses as well as possible and the Commission's information paper is a laudable start in this process. Even so, further clarity as to the process the Commission intends to follow would be valuable. In particular, NECG believes that (1) only bundles that could have a significant impact on competitors be considered, (2) if all elements in the bundle are replicable, or if some elements are not, but are separately priced, then only predation and price squeezes are of likely concern, and these can be tested for in standard ways, and (3) in the case of ties, case-by-case analysis must be undertaken. NECG also considers that tacit collusion will be facilitated by the use of an average cost approach to the imputation test along with making the data for such tests publicly available.

Appendix A

Regulators that have made use of the imputation test

In as early as 1998, the European Commission recommended the use of an imputation test (notice 98/C 265/02 on the application of the competition rules to access agreements in the telecommunications sector: Framework, relevant markets and principles, OJ C 265 22.8.1998, 2-28, available at: europa.eu.int/comm/competition/oj_extracts/1998_c_265_08_22_0002_0028_en.pdf

The UK telecommunications regulator, OFTEL, takes a similar position (See for example, "Investigation by the Director General of Telecommunications into the BT Surf Together and BT Talk and Surf Together pricing packages - May 2001" http://www.oftel.gov.uk/publications/internet/surf0501.htm, paragraphs 52 and 57).

The French regulator requires the efficient cost of downstream supply to be used rather than the vertically integrated firm's costs as a proxy for this (see Decision no. 00-1171 of the "Autorité de Régulation des Télécommunications" dated 31 October 2000 in application of article D. 99-24 of the Post and Telecommunications Code (English translation), http://www.art-telecom.fr/textes/avis/00/00-1171-eng.htm, at section titled, "II – 2. On the principle of efficiency").

In the U.S. the imputation test is used by a variety of regulators. For example:

- Illinois, see Title 83: Public Utilities, Chapter I: Illinois Commerce Commission, f: Telephone Utilities, Part 792, http://www.icc.state.il.us/icc/doclib/rules/83IAC792.pdf.

- Texas, see "Substantive Rules Applicable to Telecommunications Service Providers: Wholesale Market Provision", §26.274(g), http://www.puc.state.tx.us/rules/subrules/telecom/26.274/26.274.pdf.

- Iowa, see http://www.legis.state.ia.us/Rules/2000/iac/199iac/19938/19938.pdf.

On Canada see, for example, "Review of Regulatory Framework - Targeted Pricing, Anti-Competitive Pricing and Imputation Test for Telephone Company Toll Filings, Telecom Decision CRTC 94-13, 13 July 1994 "(Decision 94-13), http://www.crtc.gc.ca/archive/eng/Decisions/1994/DT94-13.htm.