

TELECOMMUNICATIONS ACT 2001:

**SCHEDULE 3
INVESTIGATION INTO
REGULATION OF MOBILE
TERMINATION**

Reconsideration Draft Report

PUBLIC VERSION



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COMMERCE COMMISSION

Reconsideration Draft Report on whether mobile termination should become a designated or specified service

Reconsideration Draft Report under Part 1 of Schedule 3 of the Telecommunications Act 2001 reconsidering whether or not mobile termination should become a designated or specified service.

The Commission: Douglas Webb
Donal Curtin
Shaan Stevens

**Summary of Reconsideration
Draft Report:**

The Commission's reconsidered recommendation is to designate the termination of voice calls to a cellular telephone network that originate on a fixed telephone network. The Commission recommends benchmarking as the Initial Pricing Principle and TSLRIC as the Final Pricing Principle.

**Date of Reconsideration
Draft Report:** 22 December 2005

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BRACKETS**

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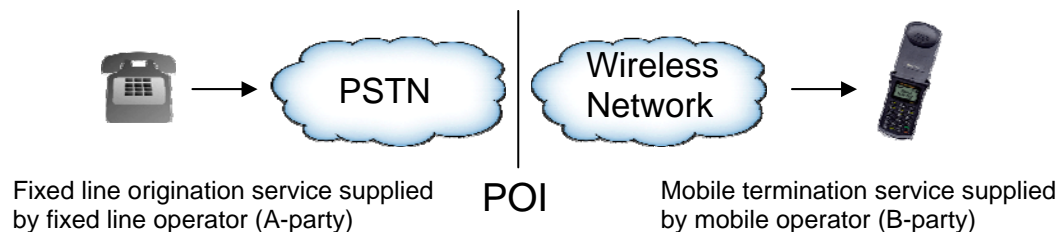
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List of abbreviations

ACCC	Australian Competition and Consumer Commission
ARPU	Average revenue per user
CBA	Cost-benefit analysis
CDMA	Code-Division Multiple Access
cpm	Cents per minute (unless otherwise noted, amounts are in New Zealand currency)
GSM	Global System for Mobile communications
ITU	International Telecommunication Union
MED	Ministry of Economic Development
Ofcom	Office of Communications – regulator for UK communication industries
POI	Point of interconnection
PSTN	Public switched telephone network means a dial-up telephone network used, or intended for use, in whole or in part, by the public for the purposes of providing telecommunication between telephone devices.
TSLRIC	The forward-looking costs over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service, taking into account the service provider's provision of other telecommunications services, including a reasonable allocation of forward-looking common costs.
2G	Second generation cellular network, characterised by digital transmission rather than analogue used by the first generation of cellular networks.
3G	Third generation cellular network, based on the IMT 2000 set of radio technology standards as recognised by the ITU.

Executive summary

1. Mobile termination rates are fees mobile network operators charge to terminate voice calls on their mobile networks. Mobile termination is the most significant cost input into the provision of fixed-to-mobile calls.
2. There is a separate wholesale market for mobile termination services on each of the mobile networks operated by Vodafone NZ Ltd and Telecom NZ Ltd.
3. There are two relevant downstream retail markets, namely the retail market for tolls and fixed-to-mobile calls, and the retail market for mobile services.
4. The use of the mobile termination service to supply a fixed-to-mobile call is depicted below:



5. There is limited competition in the markets for mobile termination services on each mobile network, and the price charged for this service is significantly above cost. There is also limited competition in the retail market for tolls and fixed-to-mobile calls.
6. A reduction in mobile termination rates is likely to result in increased competition in the retail market for tolls and fixed-to-mobile calls. Regulation of mobile termination rates will promote competition in this market through an improved alignment of prices and costs. This will reduce the cost asymmetry between fixed-only suppliers and integrated fixed/mobile suppliers of fixed-to-mobile calls, and will therefore promote entry and expansion within the market in which fixed-to-mobile calls are supplied.
7. The Commission's Final Report of its investigation into regulation of mobile termination recommended regulation of mobile termination on existing networks but not future 3G networks as a designated service.
8. The Minister required that the Commission reconsider the recommendation in order to:
 - consider the definitional and implementation issues concerning 2G and 3G which have been identified by submitters and independent technical advice and what alternatives are workable, and have merit and dynamic efficiency benefits;

- consider the commercial offers made by Telecom and Vodafone following the Commission's Final Report, in comparison to regulation; and
 - give further consideration to how best to ensure that end-users benefit from reductions in wholesale mobile termination rates.
9. This reconsideration draft report responds to the Minister's direction and new issues raised in submissions to the Minister on the Final Report.
 10. The cost-benefit analysis (CBA) used for the purposes of the reconsideration compares a counterfactual scenario based on the commercial offers of Telecom and Vodafone with a factual scenario in which mobile termination rates are regulated. The CBA indicates that although the benefits of regulation are reduced from those estimated in the Final Report, the quantifiable benefits of regulating mobile termination rates in preference to acceptance of the commercial offers are material. Regulation is estimated to produce a net benefit over a five year period of between \$55 million and \$72 million in present value terms, depending on the assumed nature of the demand functions.
 11. The Final Report recommended that regulation should apply only to termination of voice calls where the cellular telephone network technology used for that purpose was not third generation or later technology. However, it is difficult to align technology characteristics with the investment incentives the Commission sought to create in attempting to distinguish between different generations of cellular network technology.
 12. The recommendation to distinguish between 3G and non 3G network technology was introduced as a result of the Commission's conclusions that 3G voice termination should not be regulated because of the perceived risk that such regulation would cause a significant dynamic efficiency detriment. As summarised below, the Commission no longer believes that a material dynamic efficiency detriment exists or that there is any purpose in embedding distinctions in the regulated service based on the generation of cellular network technology used to terminate fixed-to-mobile calls.
 13. Given that the 3G networks of Vodafone and Telecom will, by the end of 2005, be able to reach the vast majority of the population, and that the new 3G data services supported by those networks will not be regulated, the Commission considers that the likely dynamic efficiency detriment to investment in 3G services caused by regulating termination rates is small. In addition, the Commission considers that the adverse precedential effect of regulating 3G voice calls is also small, given that regulation is linked to circumstances where clear market power exists and intervention is likely to promote competition for the long-term benefit of end-users. Furthermore, in determining an appropriate regulated rate, the Commission recognises the need for investors to obtain a reasonable return.
 14. In the Final Report, the Commission expressed a concern about regulating a risky, new, unproven technology not yet deployed. Since the Final Report, the Commission has had the benefit of studying 3G rollouts in other countries and has also accepted that both the Vodafone and Telecom 3G networks are in the advanced stages of

deployment and operation in New Zealand. The Commission does not therefore consider that 3G is appropriately characterised as a risky, new technology.

15. The estimated benefit of regulating mobile termination rates given by the CBA outweighs any residual dynamic efficiency detriment from regulating 3G voice call termination.
16. The counterfactual case based on the commercial offers of Telecom and Vodafone relies on an assumption that the offers will deliver the wholesale and retail price changes promised by the mobile operators. While it is feasible to give effect to the commercial offers through some combination of enforceable contractual undertakings, careful definition of the Telecom pass-through commitment would be required, as would effective monitoring and dispute resolution mechanisms.
17. A regulated reduction of mobile termination rates is likely to be substantially passed through to retail fixed-to-mobile prices faced by end-users, with the level of pass-through expected to increase over time as competition between fixed operators develops. Nevertheless, to minimise the risk that this does not occur, the service description includes, as an additional matter that must be considered regarding the application of section 18 when making an access determination, any commitment proposed by the access seeker as to how it will use the revenue from reduced mobile termination rates for the promotion of competition for the long-term benefit of end-users.
18. The Commission recommends that the termination on a cellular telephone network of voice calls originating on a fixed telephone network be made a designated access service.

Background and process

Background

19. The Telecommunications Act 2001 (the ‘Act’) regulates the supply of telecommunications services in New Zealand. Under Schedule 3, the Commerce Commission (the ‘Commission’) may, on its own initiative, commence an investigation into whether or not a telecommunications service should be regulated as a designated or specified service and make a recommendation to the Minister of Communications.
20. The Commission’s process for making a recommendation to the Minister is governed by Part 1 of Schedule 3 of the Act. The Commission decided to undertake an investigation into whether or not the mobile termination service should be regulated as a designated service. The mobile termination service is the termination of voice calls on a mobile telephone network which originate on a fixed telephone network.
21. The Commission’s investigation into mobile termination formally commenced with the publication in the New Zealand Gazette on 13 May 2004 of the decision to investigate.
22. On 18 October 2004, the Commission published a draft report giving the preliminary findings of its investigation into mobile termination. The Commission received submissions and cross submissions on the draft report, and held a conference to discuss these submissions on 23-25 February 2005.
23. On 9 June 2005, the Commission delivered its Final Report to the Minister of Communications recommending an alteration to Schedule 1 of the Act.
24. The Commission’s recommendation was to designate termination of voice calls originating on a fixed network where the cellular network technology used for the termination of those voice calls is not third generation or later. The Commission also recommended benchmarking as the initial pricing principle and TSLRIC as the final pricing principle.
25. The Minister’s process for making a decision on the Commission’s recommendation is governed by clause 6 of Schedule 3 which states that:

6 Decision by Minister on Commission’s recommendation

After receiving a final report under clause 4, the Minister may –

- (a) either –
 - (i) accept the Commission’s recommendation; or
 - (ii) reject the Commission’s recommendation;
- (b) require the Commission to reconsider its recommendation for any reasons specified by the Minister.

26. Prior to making a decision, the Minister sought comments from interested parties, on any new matters regarding the Commission's Final Report. On 7 July, the MED published submissions received on its website.
27. On 9 August, the Minister wrote to the Commission requiring that it reconsider the recommendation pursuant to Clause 6(b) of Schedule 3 of the Act. The reasons specified for the reconsideration were to:
- "... give consideration to the definitional and implementation issues concerning 2G and 3G which have been identified by submitters and independent technical advice and, as part of the consideration, to consider what alternatives are workable and have merit and dynamic efficiency benefits";
 - "... consider the commercial offers made to me by Telecom and Vodafone following the Commission's Final Report, in comparison to regulation"; and
 - "... give further consideration to how best to ensure that end-users benefit from reductions in wholesale mobile termination rates."

The Minister also noted that "{i}n addition, as part of its reconsideration, it would be useful if the Commission could consider any other significant points made in submissions to me on the Commission's Final Report."

28. On 11 August, the Commission requested Telecom and Vodafone to make their commercial offers public. Telecom advised that it was prepared to allow its offer to be made public. Vodafone advised that its offer was confidential to the Minister and applied to the High Court to prevent the Commission from publicly releasing details of its offer.
29. On 24 August, the Commission requested clarification from Telecom on various aspects of the commercial offer made to the Minister. Telecom responded on 30 August.
30. On 13 September, the Commission advised all interested parties that the process to be followed to respond to the Minister's requirement to reconsider the recommendation would be as follows:
- Release reconsideration draft report and revised cost-benefit model;
 - Request submissions and cross submissions on the reconsideration draft report; and
 - Deliver a reconsideration final report with a fresh recommendation to the Minister.
31. The Commission noted that this process may be affected by Vodafone's application to the High Court to prevent the Commission from publicly releasing details of Vodafone's offer to the Minister to reduce mobile termination rates.
32. After receiving submissions from TelstraClear and Vodafone on the process, the Commission confirmed on 27 September 2005 that the process originally outlined

would apply. The Commission anticipated that a conference would not be required and advised that interested parties would be notified should further consultation prove to be necessary.

33. The decision of Young J in *Vodafone New Zealand Limited v Commerce Commission*, unreported HC Wellington, CIV 2005-485-1767, prevented the Commission from making the Vodafone offer public. The Commission then requested that Vodafone provide its proposed blended (2G +3G) termination rates, on the basis that the Commission would classify the information as "Restricted Information" pursuant to the confidentiality order made by the Commission on 1 November 2005.
34. The request was made on the following terms:
 - The Commission would issue "public" and "restricted" versions of both the draft and final reports dealing with the reconsideration;
 - The "public" versions of those reports would not include Vodafone's blended 2G+3G termination rates nor figures derived from those rates;
 - The reports would include only the final net present value of the net benefits or net detriments under the various scenarios modelled by the Commission;
 - Vodafone's blended 2G+3G termination rate information, together with other information relevant to the counterfactual, would be contained in a confidential appendix to the "restricted" versions of the draft and final reconsideration reports;
 - A public version of its CBA model that would not include any counterfactual numbers would be released.
35. Vodafone replied on 11 November agreeing to provide the requested information on the basis set out in the Commission's letter. Vodafone formally provided the requested information on 16 November 2005 and requested it be treated as restricted information.
36. In order to promote an open and transparent process, the Commission has published all of the above decisions and reports on its website¹ as well as the submissions received from interested parties and other material considered by the Commission.
37. This reconsideration draft report responds to the Minister's direction to the Commission to reconsider its recommendation in the Final Report and also considers new material raised in submissions to the Minister. It concentrates on providing reasons where the Commission's approach or conclusions are different to those adopted in the Final Report. Accordingly, except where noted, the conclusions in the Final Report are unchanged.
38. For convenience, the main conclusions of the Final Report² are repeated below:

¹<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/reportsandsubmissions.aspx>

² Commerce Commission's Schedule 3 Investigation into Regulation of Mobile Termination, Final Report, 9 June 2005, Section 9, page 162

- There is limited competition in the markets for mobile termination services on each mobile network, and the price charged for this service is significantly above cost. There is also limited competition in the retail market for tolls and fixed-to-mobile calls.
- A reduction in mobile termination rates is likely to result in increased competition in the retail market for tolls and fixed-to-mobile calls. Regulation of mobile termination rates will promote competition in this market through an improved alignment of prices and costs. This will reduce the cost asymmetry between fixed-only suppliers and integrated fixed/mobile suppliers of fixed-to-mobile calls, and will therefore promote entry and expansion within the market in which fixed-to-mobile calls are supplied.
- The reduction in mobile termination rates and the increased competition, will lead to a reduction in the retail price of fixed-to-mobile calls to the benefit of end-users. The Commission conducted a cost-benefit analysis to estimate the quantum of these benefits.
- A regulated fall in mobile termination rates may lead to some rise in the price of mobile services (mobile subscription and mobile-to-mobile calls), relative to the scenario of no regulation, or alternatively, lesser price reductions than otherwise. To the extent that regulation leads to a relative increase in mobile prices and a reduction in mobile subscription levels, a range of detriments may be generated. Accordingly, this effect was factored into the cost-benefit analysis. Direct costs associated with regulation were also allowed for.
- The cost-benefit analysis showed that substantial net benefits to end-users were likely to arise from making mobile termination a designated access service.
- In addition to the benefits and costs of regulation which the Commission was able to measure, a number of qualitative factors were considered. In particular, the Commission considered regulation was likely to generate improvements in productive efficiency, though it did not attempt to quantify that impact. These improvements were in addition to the estimated benefits.
- In terms of dynamic efficiency, the Commission found that regulation of 3G networks was likely to increase the risk of delaying or restricting investment in 3G networks and cause a significant dynamic efficiency detriment. The Commission did not consider, however, that there was a material dynamic efficiency detriment from the regulation of termination on existing non-3G networks.
- The Commission considered that the regulation of mobile termination on existing networks but not future 3G networks as a designated access service would result in significant long-term benefits to end-users through the promotion of competition in the tolls/fixed-to-mobile market.

Restricted information

39. This reconsideration draft report contains some restricted information which the Commission has received from interested parties and data derived by the Commission from data sourced from those parties. Information marked with square brackets ([]) is Commission Restricted Information under the order. There are some instances where the Commission has specifically identified beside the brackets that the information is party-designated Restricted Information; for example TelstraClear-designated Restricted Information “TCRI”, or Telecom-designated Restricted Information “TCNZRI”. All other Restricted Information in this report is Commission Restricted Information. The Commission considers that this approach maximises the transparency of its process and is consistent with its approach in determinations.

Timetable

40. The Commission’s proposed timetable for the remainder of the reconsideration process is as follows:

Steps and procedures	Date
Publication of reconsideration draft report	22 December 2005
Closing date for written submissions on reconsideration draft report	31 January 2006
Closing date for cross-submissions on reconsideration draft report	15 February 2006

Public availability of submissions

41. To promote an open and transparent process, the Commission intends to publish as many submissions as possible on its website. Accordingly, the Commission requests that all submissions are provided in electronic form.

Status of information supplied to the Commission

42. The Commission discourages requests for confidentiality over submissions on the draft reconsideration report, as it is desirable to test all the information as fully as possible in a public manner. The Commission is unlikely to agree to any requests that submissions in their entirety remain confidential.
43. However, the Commission recognises that interested parties making submissions may wish to provide confidential information to the Commission. Accordingly, the

Commission issued, on 1 November 2005, a confidentiality order to apply to confidential information provided by interested parties making submissions in this proceeding. This confidentiality order allows interested parties making submissions to designate information as confidential. Any persons who wish to receive confidential information must sign a deed of undertaking as to confidentiality in an appropriate form and be approved by the Commission in accordance with the confidentiality order. In the event that the Commission or another party challenges the confidentiality status of the information, the Commission will determine whether the challenged information should be subject to the order. The confidentiality order can be viewed on the Commission's website at <http://www.comcom.govt.nz>.

44. Where it is necessary to include confidential information in written submissions, the material should be clearly marked as confidential, and preferably included in an appendix to the submission or enclosed in square brackets []. In addition to the confidential copy, submitters should provide the Commission with a public copy of such submissions, which is clearly marked as public, with the confidential material deleted or amended appropriately so it is suitable for release in both electronic and hard copy form.
45. After the expiry of the Commission's confidentiality order, the Commission will follow its usual practices in response to any request for information under the Official Information Act 1982.

Address for submissions

46. Submissions on the reconsideration draft report should be sent to:

anthony.morris@comcom.govt.nz

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Legal Framework

47. In its Final Report, the Commission stated:

The Commission's view is that, in the context of a Schedule 3 investigation, where wealth transfers which are sustainable and not themselves conducive to inefficiency are likely to result from a measure promoting competition, the Commission ought to give weight to such transfers in the cost-benefit analysis. In particular, the Commission considers it is appropriate to give weight to the anticipated transfer as a benefit to end-users in the cost-benefit analysis in the case of supply of termination services on each mobile network, where:

- The Commission considers that no other parties can terminate calls to subscribers on the Telecom and Vodafone mobile networks;
- The regulation of mobile termination rates would or is likely to promote competition;
- A consequence of the regulation of mobile termination is a redistribution from producers in favour of consumers; and
- That redistribution is expected to be sustainable and not adverse to efficiency.

In these circumstances, the Commission regards it as appropriate to have regard to the distributive effects when considering the recommendation that best gives effect, or is likely to best give effect, to the purpose set out in section 18.

48. This section addresses submissions made to the Minister that the Commission erred in applying the correct legal framework, and in particular, failed to apply a consistent approach under the Telecommunications Act compared to its approach under the Commerce Act.

49. In its submission to the Minister on the Final Report, Telecom stated:

41. Section 19 of the Act limits the Minister's and the Commission's investigatory and decision-making powers. The section imposes mandatory relevant considerations to which the Minister and the Commission must have regard when making their decision/recommendation:

41.1 the promotion of competition;

41.2 for the long-term benefit of end-users of telecommunications services within New Zealand; and

41.3 the efficiencies that will result or will be likely to result from the act or omission concerned.

50. Telecom further stated that as a matter of law, the Commission and the Minister cannot count wealth transfers for the purposes of the Act. Telecom submits that the Commission's position rests on philosophical rather than legal propositions.

51. The essence of Telecom's submission was that the Act requires the Commission and the Minister to apply a public benefit test, which treats wealth transfers as neutral.

52. The New Zealand Business Roundtable, Infratil and NGC made similar submissions to the Minister that the Commission should not consider wealth transfers as a benefit. The NZBR stated:

2.19 We submit that the Commission should presume that its governing legislation is promoting efficiency, except when unequivocal words in the Act (or subsequent Court

decisions) dictate otherwise. No credible case has ever been made that antitrust actions are a socially beneficial way of transferring wealth between groups in society given a government's ability to use tax and welfare policies for such an objective. After all, not all investors are rich and the distinction between investors and consumers is artificial in that all wealth ultimately belongs to people who are consumers. It is time that the Commission acknowledged these efficiency interpretations of its legislation and addressed the issue of where it stands on the need for consistency with the Commerce Act and related legislation. We suggest that it is not in the longer-term interests of investors, end users or ultimately the Commission itself for it to claim arbitrary powers when this could be avoided by more sensible and economically coherent interpretation of its governing legislation.

53. Infratil asserted that the Commission's approach to wealth transfers was evidence of a propensity to regulate.

54. NGC stated that:

The appropriate framework for analysing the benefits and costs of regulation is the public benefits test as this captures all the benefits and costs of regulation. Its conceptual value is that it determines whether or not an action is a true cost or a true benefit to society without including value judgements regarding who should benefit and who should not.

That is not to say that the Government should not make these value judgements. However, the Government has other institutions specially designed and with the necessary information to make these judgements. Economic regulators such as the Commerce Commission should not be seeking distributional objectives.

55. The Commission has considered these arguments but remains of the view that it should apply a consumer welfare approach in considering whether to recommend regulation of mobile termination services. In the Final Report, the Commission explains its approach to wealth transfers and concludes that in the context of a Schedule 3 investigation under the Act it should give weight to transfers and apply a consumer welfare test.

56. Sections 18 and 19 of the Act provide:

18 Purpose

- (1) The purpose of this Part and Schedules 1 to 3 is to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand by regulating, and providing for the regulation of, the supply of certain telecommunications services between service providers.
- (2) In determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered.
- (3) Except as otherwise expressly provided, nothing in this Act limits the application of this section.
- (4) Subsection (3) is for the avoidance of doubt.

19 Commission and Minister must consider purpose set out in section 18 and additional matters

If the Commission or the Minister (as the case may be) is required under this Part or any of Schedules 1 to 3 to make a recommendation, determination, or a decision, the Commission or the Minister must-

- (a) consider the purpose set out in section 18; and
- (b) if applicable, consider the additional matters set out in Schedule 1 regarding the application of section 18; and
- (c) make the recommendation, determination, or decision that the Commissioner or Minister considers best gives, or is likely to best give, effect to the purpose set out in section 18.

57. The Commission considers that section 18 is similar to section 1A of the Commerce Act. Section 1A provides:

1A Purpose

The purpose of this Act is to promote competition in markets for the long-term benefit of consumers within New Zealand.

58. The submissions cited above indicate concerns that the Commission's approach to wealth transfers under the Telecommunications Act is not consistent with its approach under the Commerce Act. The Commission does not agree that there is any inconsistency.

59. The purpose of the Commerce Act is to promote competition in markets for the long-term benefit of consumers within New Zealand. The ultimate objective is to benefit consumers. This is achieved either by promoting competition or by regulating market power directly. The Commerce Act is particularly concerned about the aggregation of market power and the misuse of market power. Firms that have market power can raise prices³ above competitive levels and restrict output. The impact might also be felt in terms of reduced service, quality, or innovation.

60. Changes in market structure, whether by way of acquisition or contractual arrangement that substantially lessen competition are prohibited under sections 27 and 47. Anti-competitive behaviour by those with a substantial degree of market power is prohibited by section 36. The use of market power to the detriment of consumers is addressed in Part IV.

61. More specifically:

- Under section 66 the Commission must decline an application for clearance if it is satisfied that an acquisition will have the effect of substantially lessening competition in a market. As noted above, a lessening of competition is equivalent to an increase in market power. An increase in market power is likely to lead to an increase in price, resulting in a detriment to consumers.
- Under section 36 a person with a substantial degree of market power is prohibited from taking advantage of, or using, that market power for an anti-competitive purpose. Eliminating or subduing competition allows the firm to increase prices at the expense of consumers.

³ When referring to increases in price, the Commission also has in mind reduction in quality or output.

- Section 67 allows the Commission to grant an authorisation for an activity that would otherwise result in a substantial lessening of competition where it is satisfied that the activity will result in benefits to the public that exceed the detriments resulting from the loss of competition or increase in market power. The authorisation provision accepts that in some circumstances an activity will result in a net benefit to the public even though it increases market power. In these situations the Commission must balance the detriment resulting from the increase in market power and potential increases in price, against the additional benefits that would accrue to the economy as a whole.
 - Part IV of the Commerce Act allows the Commission to recommend control where the Commission considers there is limited competition in a market and it is in the interests of acquirers that control be imposed. Control under Part IV is intended to encourage firms with market power to operate more efficiently and deliver services to consumers at prices that are close to cost. When imposing control, the Commerce Act has regard to efficiencies: allocative, productive and dynamic. The Commission applies a net acquirers' benefit test (i.e. a consumer welfare test).⁴
 - Under Part V, the Commission is empowered to use whatever form of control is appropriate having regard to: the extent to which competition is limited; the desirability of safeguarding the interests of acquirers; and, the promotion of efficiency in the supply of services.
62. Section 1A applies to the whole of the Commerce Act, including Parts IV and V and the control of monopoly or monopsony power. The Commission will always have regard to efficiencies. Nevertheless, there is nothing in section 1A that requires the Commission to apply a single analytical approach based on net public benefits to all deliberations under that Act.
63. When considering whether to impose control under Part IV, the Commerce Act directs the Commission to first consider whether competition in the market is limited (participants have market power); and second, to assess whether it is in the interests of acquirers to control that market power. The Commission therefore has regard to wealth transfers and applies a consumer welfare test under Part IV.
64. In contrast, the authorisation process is designed to ensure that the Commerce Act does not impede transactions that will result in significant efficiencies despite reducing competition. In assessing authorisations, the Commission regards potential price increases and the transfer of wealth to the applicant as neutral as there is no increase in overall benefit to the economy. Hence, in those cases the wealth transfer cannot be considered a benefit of the anti-competitive transaction.
65. Section 1A of the Commerce Act has similar wording to section 18 of the Telecommunications Act. The purpose in both cases is to promote competition in relevant markets for the long-term benefit of end-users or consumers within New Zealand. Under both Acts the nature of the issue before the Commission will determine the appropriate analytical approach.

⁴ Commerce Commission, *Gas Control Inquiry Final Report*, 29 November 2004.

66. In section 4 of the Final Report, the Commission concluded that there was limited competition in the market for mobile termination. This limited competition enables mobile operators to set mobile termination rates considerably above cost, and to that extent is creating barriers to entry and other competitive constraints in the retail market for tolls and fixed-to-mobile services. End-users will benefit from increased competition in that retail market as a result of a reduction in mobile termination rates through regulation. The Commission therefore, considers that it is appropriate to have regard to wealth transfers.
67. In the Final Report, the Commission's empirical analysis showed that regulation was justified under either analytical approach. Nevertheless, the legal framework section concluded that it was appropriate to have regard to distributive effects and the Commission should apply a consumer welfare test. In reconsidering its recommendation, the Commission remains of the view that in Schedule 3 investigations, the consumer welfare test should be applied, as it best gives effect to the purpose statement set out in section 18. For consistency and in order to allow comparison with the original recommendation, the Commission has again presented the results under both analytical approaches. However, the Commission in making its preliminary reconsidered recommendation, places no reliance on the public benefit analysis.
68. The Commission notes NGC's concern that the Commission should not be seeking distributional objectives. However, the Commission is under a statutory obligation to make the recommendation that best gives effect to the section 18 purpose statement. In markets where there is limited competition, regulatory control may be required in order to deliver benefits to end-users of telecommunications services within New Zealand. This is a factor to be considered with a range of other factors, including efficiencies. In any event, as noted by NGC, the government is entitled to make value judgements and consider wealth transfers; but this does not preclude the Commission from doing so in making its recommendation. The role of the Commission is to recommend and it is for the Minister to determine. This role is similar to the Commission's role under Part IV of the Commerce Act. The Commission's role under Part IV is to recommend whether control is warranted. It is then for the Minister to determine whether to accept the recommendation.
69. Accordingly, having considered the submissions to the Minister, the Commission's analysis and conclusions in the Final Report on this issue remain unchanged.

Quantitative analysis of the impact of mobile termination regulation

Background

70. The recommendation in the Commission's Final Report was based on a number of analyses, including a quantitative assessment of the likely costs and benefits of regulation that compared the scenario of a regulated mobile termination rate (the factual) with a counterfactual scenario of no regulation. The factual assumed a cost-based mobile termination rate of 15 cpm, while the counterfactual assumed a gradual annual reduction of mobile termination rates of 1 cpm from current levels.
71. The CBA in the Final Report indicated that regulation was likely to produce significant net benefits to consumers. This included the likely gains from reductions in the price of calls from fixed lines to mobile subscribers (fixed-to-mobile calls), notwithstanding some allowance for a 'waterbed effect' whereby mobile operators raise retail mobile prices in order to recover some of the lost termination revenues.
72. Following the release of the Final Report, Vodafone and Telecom advised the Minister of commercial offers to reduce their mobile termination rates. These proposed new commercial reductions in mobile termination rates represent steeper cuts in mobile termination rates than the Commission used in its counterfactual in the Final Report. Telecom introduced the first rate reduction in its commercial offer on 1 September 2005.
73. In addition, Telecom has also undertaken to reduce the fixed-to-mobile prices it charges to its retail customers by the amount of the fall in mobile termination rates if the commercial offers are accepted in place of regulation.
74. The Minister has asked the Commission to consider the commercial offers in comparison to regulation. In order to assist in this, the Commission has constructed a new counterfactual based around the commercial offers, and examined the likely impact of the proposed regulation relative to this new counterfactual.
75. The following sections discuss the various changes that the Commission has made to the CBA for the purposes of the reconsideration. As discussed in the legal framework section, the Commission considers that it is appropriate to assess the costs and benefits of regulation under the consumer welfare test.⁵
76. The basic analytical model used to assess the likely benefits and costs of regulation is the same as the model used in the Final Report.⁶ The main changes have been to update the study timeframe, to incorporate the commercial offers made by the mobile operators as the counterfactual, and to allow the factual cost-based mobile termination rate to decline over time. A final section presents the results of the CBA, which compares the regulatory factual with the new counterfactual.

⁵ The net benefits of regulation under the public benefit test are presented in Appendix B.

⁶ Appendix B discusses an adjustment to allow for a possible loss in mobile producer surplus under the public benefit test, arising from the rise in mobile subscription prices under the "waterbed effect".

Study timeframe

77. In the Final Report, the net present value of the flow of costs and benefits from regulation was calculated as of July 2004. This date conveniently aligned with Telecom's financial year-end and the commencement of the Commission's investigation. It was assumed that a further 12 months would be required for the implementation of regulation. Net benefits were accordingly estimated for the years to June 2006, 2007, 2008, 2009, and 2010, and discounted back to 2004 terms.⁷

Updated historic fixed-to-mobile price and quantity

78. Should the Minister accept a recommendation to regulate, the Commission expects that the regulation will be in force by the middle of 2006. Accordingly, the start of the study period is now 1 July 2006, with the first year during which costs and benefits of regulation are assessed being 2006/07.
79. As part of this reconsideration process, the Commission has gathered additional revenue and volume information on fixed-to-mobile calls for 2004/05.⁸ This information is used to estimate historic fixed-to-mobile retail prices, quantities, and pass-through rates. This historic data serves as a reference for the Commission's forward-looking assessment of the costs and benefits of regulation. For example, the Commission has estimated that over the period from 1996/97 to 2004/05, approximately 68% of the reduction in mobile termination rates was passed through into fixed-to-mobile retail prices. The Commission has projected fixed-to-mobile pass-through rates to linearly increase from 68% in 2004/05, to an assumed end-point by 2010/2011. This end-point differs under the counterfactual and factual scenarios, as discussed below.

Updated mobile termination rates (2005/06)

80. The Commission has estimated changes in fixed-to-mobile retail prices, based on annual changes in mobile termination rates and assumed levels of pass-through. As noted above, the Commission has used historic data up to 2004/05, and is assessing the costs and benefits of regulation commencing in 2006/07. It is therefore necessary to consider what is likely to happen to mobile termination rates in the intervening year (2005/06).
81. According to Telecom's commercial offer, Telecom has reduced its mobile termination rate to 24 cpm, with effect from 1 September 2005. Telecom has stated that its offer is conditional on regulation not being recommended. However, Telecom has stated that it would not retrospectively adjust its termination rate applying during the period from the commencement of the commercial offer (September 2005) to the date on which regulation might be recommended.⁹ Therefore, should a recommendation to regulate be made, Telecom might increase its termination rate to

⁷ Throughout this reconsideration report, the year ending June 2006 is referred to as the 2005/06 year, etc.

⁸ In the Final Report, the Commission used historic fixed-to-mobile data for 1996/97 through to 2003/04. The Commission has now collected corresponding data for 2004/05.

⁹ *Clarification of mobile termination offer made to Minister*, letter from Bruce Parkes to Osmond Borthwick, 30 August 2005.

its pre-offer level. Any such increase, if it were to be made, would be effective only for a limited period until the Commission's first determination.

82. Given that this is a reconsideration process, with parties already having submitted extensively both to the Commission and to the Minister, it is reasonable to assume that a final decision by the Minister on whether to regulate would promptly follow the Commission's recommendation. Accordingly, if regulation were to be introduced, regulated rates are expected to become available by the middle of 2006, allowing for a period for commercial negotiation, and given that regulated rates would be backdated to the date of any application.

Revised counterfactual scenario

83. The Minister requested that the Commission:

... consider the commercial offers made to me by Telecom and Vodafone following the Commission's Final Report, in comparison to regulation.

This section considers the impact of regulation of mobile termination rates, as compared to the commercial offers put forward by the mobile operators.

84. The commercial offers have been treated as the counterfactual scenario to regulation. The mobile operators have stated that in the absence of regulation, they would implement the mobile termination rates contained in their commercial offers.

Counterfactual mobile termination rates

85. The counterfactual scenario represents the Commission's assessment of what is likely to happen in the absence of regulation. In the Final Report, the Commission's counterfactual was based on information supplied by the mobile operators on mobile termination rates in existing interconnection contracts. Based on this information, the Commission assumed that mobile termination rates would fall by 1 cpm each year over the study period, commencing from an average rate of 28 cpm in the 2003/04 year.
86. The commercial offers represent steeper reductions in mobile termination rates. For example, for 2006/07, the weighted average mobile termination rate according to the commercial offers is [] cpm, compared to an estimated average of 25 cpm in the Commission's Final Report.¹⁰ By 2009/10, the weighted average mobile termination rate in the commercial offers is estimated to be [] cpm, which is considerably lower than the 22 cpm used in the Final Report.
87. A summary comparing the profile of counterfactual mobile termination rates in the commercial offers, and the counterfactual rates used in the Final Report, is provided in Table A1 of Appendix A.

¹⁰ Commission's Final Report, Table 7.

Fixed-to-mobile pass-through rates

88. In its Final Report, the Commission noted that the extent to which reductions in mobile termination rates would be passed through into fixed-to-mobile retail prices will be influenced by the strength of competition in the downstream market in which fixed-to-mobile calls are supplied. The more competitive is this market, the stronger will be the relationship between changes in costs (such as mobile termination rates) and changes in retail prices.
89. The Commission also noted that fixed-to-mobile competition is likely to increase over time,¹¹ and this is likely to result in an increase in pass-through. Under the counterfactual, the Commission assumed that reductions in the mobile termination rate would be partially passed through into retail fixed-to-mobile prices, with this pass-through rate gradually increasing from 65% (the estimated historic level over 1996/97-2003/04) to 75% over the study period.
90. To the extent that the proposed regulation of mobile termination rates further promotes competition in the market in which fixed-to-mobile services are supplied, this should be reflected in a higher pass-through rate under the regulatory factual. As discussed in the Commission's Final Report, regulation of mobile termination rates will force these rates towards cost, and this is likely to provide added stimulus to fixed-to-mobile competition.
91. As an integrated fixed and mobile operator, Telecom will face a lower cost structure as long as mobile termination rates remain above cost. This is because, absent cost-based regulation, Telecom only pays the above-cost mobile termination rate (26 cpm) on calls which originate on its fixed network and terminate on Vodafone's mobile network. For other calls which originate and terminate on Telecom's networks, Telecom only faces the actual cost, which is estimated to be not more than 15 cpm. However, non-integrated fixed-to-mobile suppliers would have to pay the 26 cpm on all calls terminating on a mobile network. Moving mobile termination rates towards cost will reduce the competitive distortion driven by Telecom's lower cost base.
92. On this basis, regulation of mobile termination rates is expected to promote competition in the downstream market, and consequently a higher fixed-to-mobile pass-through rate was used in the Final Report, increasing from 65% to 100% over the period.
93. The updated cost-benefit analysis is referenced against a starting pass-through assumption of 68% for 2004/05, which is based on the Commission's analysis of historic pass-through over the period 1996/97-2004/05.
94. Should the Telecom offer be accepted, Telecom would pass 100% of its mobile termination rate reductions through into its retail fixed-to-mobile prices. This suggests that there would be a one-step increase in pass-through, from 68% to 100%.

¹¹ This reflected the view that a number of 'exogenous' factors are likely to promote competition in the market in which fixed-to-mobile calls are supplied, suggesting increasing levels of pass-through over time. Such factors, including pre-selection and resale, would be present under both the counterfactual and the factual scenarios.

This increase would not be driven by any sudden improvement in competitive conditions in the fixed-to-mobile market, but rather appears to be the result of Telecom's attempt to discourage the regulation of mobile termination rates by adding to the perceived attractiveness of its offered alternative.

95. In considering the reaction of other fixed-to-mobile competitors to Telecom's offer, and the rate at which they may pass any reductions in mobile termination rates into retail prices, it is possible that the smaller competitors (accounting for around []% of fixed-to-mobile and tolls revenues) would follow Telecom's lead in respect of pass-through. In such a case, the 100% pass-through assumption would be applicable to all fixed-to-mobile operators.
96. However, there may also be reasons why Telecom's competitors might pass through differing amounts of any such mobile termination rate reduction. For example, where a competitor currently charges less than Telecom for a fixed-to-mobile call, that competitor would be under less pressure to exactly match the Telecom pass-through response. Although there is some variation in charging patterns between fixed-to-mobile suppliers across different customer types, average fixed-to-mobile prices charged by Telecom have generally been higher than those charged by its competitors.
97. In addition, different fixed-to-mobile providers are likely to have differing profiles of retail customers. For example, it appears that a number of Telecom's fixed-to-mobile competitors have a higher proportion of residential customers, where pass-through rates have historically been relatively low. Accordingly, competitor reaction will also depend on how Telecom passes through the reductions in mobile termination rates into retail fixed-to-mobile prices applying to different customer segments. For example, Telecom may choose to pass through a greater proportion of the benefits to its business customers.
98. These factors suggest that Telecom's competitors may differ from Telecom in their responses to lower termination rates. The 100% pass-through assumption is accordingly applied to Telecom, while a lower rate is used for Telecom's competitors. For the latter, it is assumed that fixed-to-mobile pass-through will linearly increase from 68% in 2004/05, to 85% by 2010/11. This profile is higher than under the counterfactual used in the Final Report, to reflect the lower mobile termination rates in the commercial offers. In other words, under the commercial offers, mobile termination rates are closer to the estimated cost of terminating calls on a mobile network, resulting in a more competitive downstream market than would have been the case under the original counterfactual scenario.
99. The fixed-to-mobile pass-through rates used in the revised counterfactual scenario are summarised in Table 1 below, along with the counterfactual pass-through rates used in the Final Report. The revised factual pass-through rates discussed later are also shown.

Table 1: Fixed-to-mobile pass-through rates

June year	Revised Counterfactual		Revised Factual	Old Counterfactual (Final Report)	Old Factual (Final Report)
	Telecom	Other			
				65%	65%
2004/05	68%		68%	67%	70%
2005/06	100%	71%	73%	68%	75%
2006/07	100%	73%	77%	70%	81%
2007/08	100%	76%	82%	72%	87%
2008/09	100%	79%	88%	73%	93%
2009/10	100%	82%	94%	75%	100%
2010/11	100%	85%	100%		

Note: the study period is shaded.

100. Weighting the above pass-through rates by market share results in a weighted average fixed-to-mobile pass-through rate of []% in 2006, increasing to []% by 2011. The effect of these pass-through assumptions would be a slight reduction over time in Telecom's retail fixed-to-mobile pricing margin over its competitors.

Counterfactual fixed-to-mobile prices

101. The above factors combine to produce a series of lower counterfactual fixed-to-mobile prices (compared to the counterfactual used in the Final Report). The lower fixed-to-mobile prices under the new counterfactual have the effect of reducing the estimated consumer surplus available from regulation, though significant benefits remain.
102. Appendix A summarises the counterfactual mobile termination rates and retail fixed-to-mobile prices under the old and new counterfactuals.

Factual scenario

Factual mobile termination rates

103. In the factual scenario of regulated cost-based mobile termination rates, the Final Report has used an estimate of 15 cpm for the cost of mobile termination. This estimate was based on benchmarking against other countries in which mobile termination rates were subject to cost-based regulation. The cost-based mobile termination rate of 15 cpm was held constant over the study period.
104. Since the Final Report, the Austrian regulator has published an estimate of a cost-based mobile termination rate of 6.79 eurocents (which is equivalent to NZ13.15 cpm)¹². This represents an additional benchmark against which to set a cost-based mobile termination rate, as summarised in Table 2.

¹² Telekom-Control-Kommission, *Notification of draft measures according to Article 7 of Directive 2002/21/EC (Framework Directive)*.

Table 2: Benchmarked mobile termination cost estimates

	Basis	Updated (NZcpm)
South Korea	TSLRIC	4.98
Malaysia	TSLRIC	5.89
Israel	LRIC	8.14
New York (Sprint)	TELRIC	9.11
Sweden	LRIC+	11.05
California (Sprint)	TELRIC	11.69
Austria	LRAIC	13.15
ACCC	Benchmarking, internal data	13.92
Florida (Sprint)	TELRIC	15.43
Ofcom	LRIC+	16.05
Average		10.94
75 th percentile		13.73

Rates converted using 10-year exchange rates (Dec 2005)

105. The addition of Austria, and the use of updated long-run exchange rates, results in a slight reduction in the 75th percentile mobile termination rate, from 13.95 cpm in the Final Report, to 13.73 cpm. Given the other cost data to which the Commission referred in the Final Report,¹³ the use of a cost-based factual mobile termination rate of 15 cpm continues to be appropriate.
106. The Commission has examined regulated mobile termination rates in a number of other jurisdictions, but is not satisfied that they are cost-based rates. For example, a number of regulated rates are subject to a price cap, and are often referred to as “cost-oriented”. However, such rates appear to be above the cost of terminating calls on a mobile network.
107. There are a number of reasons why the cost of mobile termination might not remain constant over time. In particular, it is plausible that mobile termination costs may be declining, especially as mobile customer numbers and traffic volumes increase. Other factors that point to a reduction in unit costs over time include declining equipment costs, economies of scope from providing a wider range of services, and increasing migration of traffic to lower cost 3G platforms.
108. Some support for this proposition is found in the commercial offers made by the mobile operators, as well as comments made by the mobile operators at the conference on the Commission’s prior draft report. According to the commercial offers, mobile termination rates would decline over the period 2005-2010. In response to questions at the conference regarding the drivers of changes in mobile termination rates, both Vodafone and Telecom referred to the effect of economies of scale, and that declining costs are a feature of the industry.¹⁴

¹³ This included the results of overseas regulatory cost models, and New Zealand cost estimates. Final Report, paragraphs 519-521.

¹⁴ Conference transcript, page 185. In addition to the scale effect of increasing customer numbers, demand will also increase under the regulatory factual scenario, as a result of an elasticity effect of the expected fixed-to-mobile price reductions. This could be expected to reinforce the downward trend in unit costs.

I think for us, over time, as we grow, we get better economies of scale, that costs go down as we try and attract more and more customers to our network (Peter Stiffe, General Manager Public Policy Vodafone Australia)

A similar response to Mr Stiffe. We look at a mix of factors that go into our pricing, including particularly declining costs, which is a prevalent feature in our industry at the moment, in the mobile industry, that has a significant impact (Bruce Parkes, General Manager Government and Industry Relations, Telecom)

109. To the extent that these cost reductions are relevant to the movements in mobile termination rates contained within the commercial offers made by the mobile operators, a yardstick for allowing the regulated mobile termination rate to decline (to reflect cost reductions over time) might be the reductions in the commercial offer mobile termination rates. For example, in the Telecom commercial offer, the average mobile termination rate declines from 21.9 cpm in 2006/07, to 19.8 cpm in 2007/08, a reduction of just under 10%. A similar proportionate reduction could be applied to the factual mobile termination rate. If the factual mobile termination rate were set at 15 cpm in 2006/07, the expected factual rate for 2007/08 would be 13.6 cpm.
110. The Commission has also considered information from regulated cost-based mobile termination rates in other jurisdictions. In particular, Ofcom has recently updated its LRIC-based model for mobile termination, to reflect changes in a number of key model inputs.¹⁵ These changes include a revision to the cost of capital estimate, updated forecasts of demand for termination services, as well as a number of other parameters (such as asset price trends and updated spectrum fees). Of particular relevance here is the impact of higher-than-expected demand on the LRIC estimates.
111. Ofcom now forecasts a higher number of mobile subscribers and a higher volume of mobile traffic than it had previously. This results in a reduction in the profile of LRIC estimates for mobile termination over the period to 2009/10. For example, for 900/1800MHz operators, the impact of higher demand on the LRIC outputs is set out in Table 3.¹⁶

Table 3: Ofcom LRIC adjustment to reflect updated demand

	2005/06	2006/07	2007/08	2008/09	2009/10
LRIC (before)	3.90	3.55	3.42	3.36	3.30
LRIC (after)	3.79	3.44	3.31	3.25	3.20

(Pence per minute, real 2000/01)

112. A comparison of the LRIC estimates for any one year shows the impact of the higher volumes on the estimated cost of mobile termination. The reductions over the period also suggest that costs are likely to be decreasing over time.
113. The results of Ofcom's modelling suggest that costs are expected to decline over time, by around 16% over the four years to 2009/10, or an average annual reduction of around 4%.

¹⁵ Ofcom, *Wholesale mobile voice call termination markets – a proposal to modify the charge control conditions*, 7 June 2005.

¹⁶ *Ibid*, Figure E6.

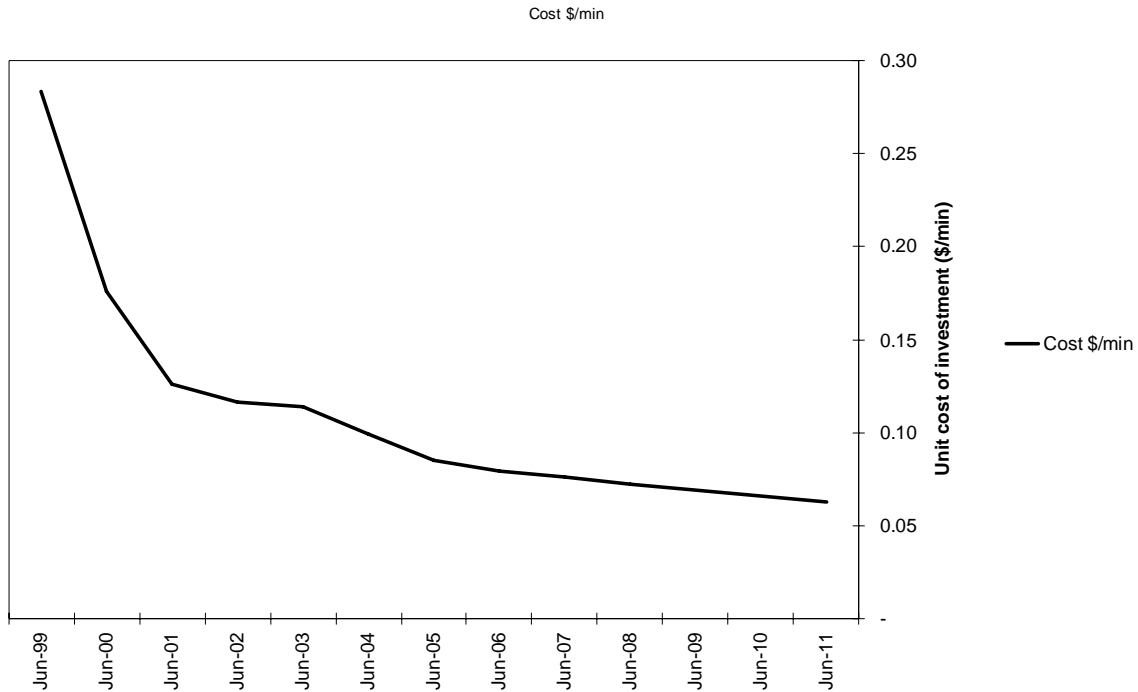
114. These patterns of declining costs over time are also consistent with cost information provided to the Commission by the mobile operators. These cost models contained forecasts of increasing demand over time, both in terms of the number of mobile subscribers and total minutes. Increases in capital and operating costs were considerably less than the expected increase in traffic carried. This results in a sharp reduction in unit costs over time.
115. A similar pattern has been found when analysing historic and expected traffic and annual capital expenditure by the mobile operators in New Zealand. The Commission has estimated that the average annual capital expenditure in the mobile sector in New Zealand has been around \$345 million. In addition, it is assumed that mobile penetration in New Zealand will reach 120% by 2010/11 (noting that a number of countries in Europe are already above 100%).¹⁷ The estimates of the unit cost of investment per minute obtained are shown in Table 4 and Figure 1.¹⁸

Table 4: Estimated unit cost of capital investment in mobile networks in New Zealand

	FTM minutes/ customer/year	Mobile outgoing minutes/ customer/year	Total number of mobile customers (million)	Mobile penetration level	Unit cost of investment per minute of usage	Decrease in unit cost
1998/99	475	866	0.91	24%	\$0.2835	
1999/00	408	866	1.54	40%	\$0.1758	-38.0%
2000/01	317	880	2.29	59%	\$0.1261	-28.3%
2001/02	326	894	2.44	62%	\$0.1162	-7.9%
2002/03	322	846	2.60	65%	\$0.1138	-2.0%
2003/04	298	853	3.03	75%	\$0.0992	-12.9%
2004/05	290	862	3.53	86%	\$0.0850	-14.3%
2005/06	280	859	3.82	93%	\$0.0795	-6.5%
2006/07	278	854	4.02	98%	\$0.0759	-4.5%
2007/08	273	854	4.23	103%	\$0.0725	-4.5%
2008/09	270	858	4.45	108%	\$0.0689	-5.0%
2009/10	268	857	4.68	114%	\$0.0657	-4.7%
2010/11	264	855	4.92	120%	\$0.0628	-4.4%

¹⁷ For example, according to the ITU, Luxembourg had the highest mobile penetration in 2004 (~120%), while eight other countries had penetration levels in excess of 100%. See http://www.itu.int/ITU-D/ict/statistics/at_glance/cellular04.pdf. For the purposes of this exercise, the Commission has based its assumption for New Zealand mobile penetration in 2010/11 to reach the highest ITU level in 2004 (120%).

¹⁸ The unit costs depicted in Table 4 and Figure 1 refer to movements in unit capital costs as a result of increasing scale. Other factors may also influence total unit costs, such as movements in labour costs, movements in equipment costs, and the introduction of lower cost technologies over time.

Figure 1: Estimated unit cost of capital investment in mobile networks in New Zealand

116. The factual mobile termination rate is accordingly assumed to decline over the study period. Table 5 sets out possible reductions in the regulated mobile termination rate over time, based on the mobile termination rate reductions put forward in Telecom's commercial offer; the reductions implied by Ofcom's cost modelling; and the reductions estimated in unit capital costs in New Zealand.
117. These reductions in mobile termination rates tend to be driven by economies of scale achieved as mobile penetration increases over time. In addition, as noted earlier, declining equipment costs, and the introduction of lower cost technology, are also expected to reduce unit costs.

Table 5: Regulatory factual mobile termination rates

	2006/07 (cpm)	2007/08 (cpm)	2008/09 (cpm)	2009/10 (cpm)	2010/11 (cpm)
Existing factual	15.00	15.00	15.00	15.00	15.00
Declining as per offers*	15.00	13.56	12.88	12.33	11.78
Declining as per Ofcom	15.00	14.43	14.17	13.95	
Declining as per NZ unit costs	15.00	14.33	13.62	12.98	12.40

* Factual mobile termination rate declines in proportion to the annual reductions in the commercial offers

118. These three profiles suggest that from a starting regulated cost-based mobile termination rate of 15 cpm in 2006/07, a cost-based mobile termination rate of around 12 cpm would be reached by 2010/11. This is the cost-based mobile termination rate that the Commission has used for 2010/11. In the intervening period, the Commission

has used a stepped reduction in regulated mobile termination rates, such that the initial mobile termination rate of 15 cpm is set for two years, after which the mobile termination rate would be likely to be reset through fresh regulatory proceedings or commercial offers. Mobile termination rates would therefore follow a step reduction (of -1.5 cpm) at the end of 2007/08, and again at the end of 2009/10.¹⁹

Factual fixed-to-mobile pass-through rates

119. The use of a counterfactual fixed-to-mobile pass-through rate based on Telecom's 100% commitment raises the question of what pass-through rate should be used under the factual of regulation. If pass-through in the fixed-to-mobile market is driven by the level of competition in that market, and regulation is considered to promote competition in the supply of fixed-to-mobile services, pass-through under the regulatory factual would be expected to be higher than under the counterfactual (as was assumed in the Final Report). However, that would suggest a factual pass-through rate in excess of 100%, which seems unlikely.
120. Since Telecom has committed to 100% pass-through only if regulation is not adopted, the Commission has retained the factual pass-through rates used in the Final Report, although as noted earlier, the starting rate has been updated (from 65% to 68%) and the rates used for subsequent years have been adjusted accordingly (as shown in Table 1).

Factual fixed-to-mobile prices

121. Table 6 summarises the factual mobile termination rates and retail fixed-to-mobile prices contained in the Final Report, along with the corresponding rates under the new factual scenario discussed above.

Table 6: Old and new factual scenarios

June Year	Old Factual (Final Report)		New Factual	
	Mobile termination rate (cpm)	Retail fixed-to-mobile price (cpm)	Mobile termination rate (cpm)	Retail fixed-to-mobile price (cpm)
2003/04	28.00	42.21		
2004/05	27.00	41.54	27.00	40.97
2005/06	15.00	32.53	[]	[]
2006/07	15.00	31.87	15.00	31.31
2007/08	15.00	31.15	15.00	30.82
2008/09	15.00	30.37	13.50	28.98
2009/10	15.00	29.54	13.50	28.34
2010/11			12.00	26.15

¹⁹ The step approach is justified on the basis that any determination made by the Commission is likely to set a single rate for several years, and that at the end of the determination period, a new application for access would be made.

‘Waterbed effect’ under the commercial offers

122. Under the commercial offers, mobile termination rates are lower than the counterfactual rates in the Final Report. The use of the commercial offers in the new counterfactual therefore leads to a smaller regulated reduction in mobile termination rates (compared to the original counterfactual), which in turn leads to a smaller increase in retail mobile services prices as a result of the waterbed effect. Under the expected operation of the waterbed effect, the steeper reduction in mobile termination rates under the commercial offers (compared to the original counterfactual) could be expected to result in higher mobile subscription prices under the commercial offers (compared to the original counterfactual). The Commission has made an adjustment to allow for this, which is discussed below.
123. Under the original counterfactual, mobile termination rates declined from 28 cpm (2003/04), by 1 cpm each year, resulting in a mobile termination rate of 22 cpm by 2009/10. The new counterfactual based on the commercial offers, shows a steeper reduction in mobile termination rates.
124. The theory of the waterbed effect would be that retail mobile subscription prices would be higher under the commercial offers, compared to the original counterfactual, due to the steeper reduction in mobile termination rates.²⁰
125. In order to reflect this in the cost-benefit analysis, an initial run was conducted that compared the commercial offers with the original counterfactual. This generated a set of retail mobile subscription prices consistent with the commercial offers, and indicated that the commercial offers would, as expected, result in higher retail subscription prices. Specifically, compared to an annual retail mobile subscription estimate of \$518.25 under the original counterfactual, it is estimated that the commercial offers would result in a retail subscription price of \$523 in 2006/07, increasing slightly to just over \$524 by 2011.
126. These mobile prices are used as the mobile subscription prices under the counterfactuals.

Waterbed effect and calling party consumer surplus

127. The CBA allows for some increase in mobile subscription prices as a result of regulation of mobile termination rates. As a result of this increase in prices, demand for mobile subscription declines. As marginal mobile subscribers discontinue in the face of this price increase, calling parties are no longer able to make calls (fixed-to-mobile, or mobile-to-mobile) to those marginal subscribers, and hence experience a loss in consumer surplus. In the CBA, this loss is measured as a detrimental effect of regulation.
128. In the Final Report, the Commission noted that:²¹

²⁰ Telecom confirmed there would be a waterbed effect arising from the commercial offers. Letter from Telecom to Commission (30 August 2005): ‘As Telecom has submitted to the Commission, changes to termination rates affect the economics of mobile services. Telecom’s four year reduction of termination rates will impact on mobile services pricing in this way.’

It may not be appropriate to count the entire loss of fixed-to-mobile consumer surplus as a detriment. For example, although the called party could not be contacted using a fixed-to-mobile call, s/he could be contacted on a fixed line (ie a FTF call). However, as noted in the draft report, the Commission does not consider there to be economic substitutes for termination of calls on mobile networks, and hence no 'offset' to the fixed-to-mobile loss has been included.

129. The Commission notes that the marginal mobile subscribers are still likely to be able to receive calls on a landline, and that the actual loss in calling party consumer surplus may be less than the full amount that is measured in the CBA. This effect, of replacing a fixed-to-mobile call with a fixed-to-fixed call, may have implications for market definition, although this would depend on the amount of call substitution taking place. The end result is that net benefit estimated by the CBA may be understated.²²

Summary of results

Overview of framework

130. This section presents the results of the Commission's reconsideration of the quantitative assessment of the benefits and costs expected from the regulation of mobile termination rates in New Zealand.
131. The Commission's assessment of benefits and costs arising from the proposed regulation involves a comparison of a counterfactual scenario, in which mobile termination rates are not subject to regulation, but drop according to the commercial offers made by Telecom and Vodafone, and a factual scenario, in which mobile termination rates are regulated. The differences between these two scenarios are attributed to regulation.
132. The study period examines the costs and benefits associated with regulation over a five-year period. The stream of benefits and costs are then discounted to generate a net present value (NPV). Specifically, the NPV is based at 1 July 2006; and the costs and benefits associated with regulation are assessed over each of the subsequent five years.
133. The factual scenario involves a regulated reduction in mobile termination rates, from [] cpm in 2005/06 to 12 cpm in 2010/11. Under this scenario, it is assumed that a gradually increasing proportion of the reduction in mobile termination rates will be passed through into retail fixed-to-mobile prices, such that by 2010/11, the entire reduction (-[] cpm) is reflected in lower retail prices.

²¹ Final Report, footnote 179.

²² The Commission has conducted a sensitivity analysis in which the calling party consumer surplus detriment is scaled back, by a ratio reflecting the number of fixed connections in New Zealand, as a proportion of the number of mobile connections. A ratio of 1.80m/3.63m is used. The range of net benefits under the consumer welfare test increases from \$54.8m-\$72.1m, to \$67.8m-\$75.6m; while the range of benefits under the public benefits test increases from \$1.4m-\$10.4m, to \$13.9m-\$14.4m.

134. Table A3 in Appendix A summarises the estimated fixed-to-mobile prices and quantities under the counterfactual of no regulation, and under the regulatory factual.
135. Under the regulatory factual, retail fixed-to-mobile prices are lower than under the commercial offer counterfactual. These price reductions generate an increase in demand for fixed-to-mobile services, based on an assumed demand elasticity. The expansion in fixed-to-mobile demand is greater under the assumption of a constant elasticity demand curve.²³
136. The benefits of price reductions arising from regulation of mobile termination rates emerge as the regulated reductions are passed through into downstream retail prices for fixed-to-mobile calls. As fixed-to-mobile prices decline as a result of lower mobile termination rates, benefits are generated for fixed-to-mobile callers. This can be represented by a shift along the fixed-to-mobile demand curve.
137. The Commission has also considered the possibility of mobile termination regulation producing a number of detrimental effects. These detriments would arise where mobile operators respond to regulation by raising prices of retail mobile services (or reducing those prices at a lesser rate than they would otherwise have done), leading to a reduction in demand for those services.
138. One such detriment is where mobile subscription prices increase as a result of the proposed regulation (or decline at a lesser rate), and mobile subscription levels decline (or increase more slowly). This generates a mobile subscriber detriment. This is a shift along the mobile subscription demand curve.
139. In addition, fixed subscribers are no longer able to call those dropped mobile subscribers. In other words, there is a reduction in the level of fixed-to-mobile calls, as a result of there being fewer mobile subscribers. This can be thought of as a contraction of the fixed-to-mobile demand curve, although it is possible that the dropped mobile subscribers might still receive calls on a fixed line.
140. Similarly, the remaining mobile subscribers would no longer be able to call the dropped mobile customers, resulting in a reduction in the level of mobile-to-mobile calls. This would result in a contraction in the demand curve for mobile-to-mobile calls.
141. Finally, the Commission has included an allowance for the direct costs of the regulatory process. As with the Final Report, indirect costs have been considered explicitly. For example, in terms of the quantitative analysis, the Commission has modelled the indirect effect of regulation on mobile subscription prices,²⁴ which generates a number of potential detriments; and has also adopted a number of conservative assumptions, including using the 75th percentile of benchmarked cost-based mobile termination rates to reflect regulatory risk. In terms of qualitative analysis, the Commission has separately considered the likely impact of regulation on investment incentives under the dynamic efficiency section of this report.

²³ As per the Final Report, Figure 5

²⁴ ie the 'waterbed effect'.

Consumer welfare results

142. The consumer welfare approach is the approach which the Commission considers is the most appropriate to apply in considering the benefits of regulation, as discussed in the Legal Framework chapter. Under this approach changes in consumer surplus are measured, with increases in consumer surplus treated as a benefit, and reductions in consumer surplus being treated as a detriment. Any offsetting changes in producer surplus are ignored.
143. As fixed-to-mobile prices decline under the regulatory factual, demand for fixed-to-mobile services expands. The corresponding expansion in consumer surplus comprises a gain in allocative efficiency, and a transfer from suppliers to consumers.
144. Allocative efficiency refers to the optimal allocation of resources to their most valued use. In the context of telecommunications, this occurs where service providers use their resources to produce the telecommunications services most valued by end-users.
145. In estimating the allocative efficiency effects of mobile termination regulation, the Commission has used cost estimates based on long-run incremental cost (LRIC), rather than measures of marginal cost. LRIC-based estimates are appropriate measures of cost in the presence of high fixed costs, and the derivation of these estimates for the purposes of this reconsideration has been based on benchmarks referred to earlier.
146. In addition to the quantified gain in allocative efficiency, there is also a transfer to consumers from producers. For each year over the study period, this is equivalent to the reduction in price, multiplied by the level of demand under the counterfactual for that year.
147. In terms of the detriments associated with regulation of mobile termination rates, the Commission has included an estimate of the direct costs associated with the regulatory process. These included estimates of the costs incurred by access providers and access seekers, as well as Commission costs.
148. To the extent that mobile operators raise retail mobile prices in response to regulated reductions in mobile termination rates, this will generate a range of detriments. The relative increase in retail mobile prices will lead to a relative reduction in demand for mobile subscription. Consequently, fixed subscribers will no longer be able to call those mobile subscribers who drop off the mobile networks, and there will be a loss of fixed-line consumer surplus in respect of those calls. Similarly, the remaining mobile subscribers will no longer be able to make mobile-to-mobile calls to the dropped mobile subscribers. In addition, the increase in mobile prices will reduce the consumer surplus of mobile subscribers.

Summary of consumer welfare results

149. Under the consumer welfare approach, regulation is estimated to produce a net benefit over the period of between \$55 million and \$72 million in present value terms, depending on the assumed nature of the demand functions.

150. This is comprised of total benefits (resulting largely from lower fixed-to-mobile prices) of between \$210 million and \$212 million; and total detriments (resulting largely from increases in mobile subscription prices) of between \$138 million and \$157 million.
151. The range of net benefits is primarily driven by the difference in the detriment estimates, depending on whether the demand functions are assumed to be linear or constant elasticity. This assumption has particular significance for the detriments for fixed and mobile subscribers who call mobile subscribers (ie the calling party fixed-to-mobile and mobile-to-mobile detriments), where the estimated detriments are significantly higher using the constant elasticity demand assumption. These differences account for most of the variation in the net results.
152. In deriving these estimates, the Commission has assumed that the demand elasticity for fixed-to-mobile and mobile-to-mobile calls is around -0.6. However, the fixed-to-mobile and mobile-to-mobile detriments arise as a result of marginal mobile subscribers dropping off the mobile networks. As noted in the Final Report, it is likely that these marginal customers make and receive fewer calls than the average mobile subscriber. Given this relatively low demand, it is likely that calls made to these marginal subscribers would be more elastic than the average. Even if there were a minimal quantity of extremely important calls made to these marginal subscribers, it could be expected that demand for these calls would be more price elastic. The use of a higher calling elasticity in the detriments calculation will tend to lower the loss of consumer surplus, with a relatively large effect on the constant elasticity estimate.
153. In addition, the use of a constant elasticity demand curve with a capped willingness to pay (of \$3.00 per minute) may exaggerate the loss of consumer surplus. This is because such a demand curve may overstate the level of demand at such a high price (which is up to 10 times the average call price). In other words, the “tail” of the constant elasticity demand curve may be too large.²⁵
154. These factors suggest that while the constant elasticity demand curve may be a useful approximation to an upper bound of possible detriments, greater weight should be placed on the results derived from the linear demand curve assumption.
155. The Commission also notes that the discounted net benefits estimated each year generally increase substantially over the study period (in particular, from 2008 on). Although the Commission has used a study period of five years, and future benefits and costs are more heavily discounted, the trend of increasing net benefits over time suggest that there is likely to be a substantial benefit to end users from regulation, under the consumer welfare test.

Sensitivity results

156. The Commission has considered a range of sensitivity scenarios, as set out in Appendix C. These sensitivity tests focus on a number of key assumptions underlying the Commission’s assessment of costs and benefits associated with regulation. The

²⁵ In Australia, the ACCC found a submission by Optus that a constant elasticity demand curve with a cap of \$2.50 per minute (at which fixed-to-mobile subscribers make 140 minutes of calls each year) to be “highly implausible”. See ACCC, Mobile Services Review, June 2004, page 162.

sensitivity analysis shows that changes in assumptions lead to changes in the net benefit results in the expected direction, and the analysis also identifies the key assumptions underlying the assessment of likely costs and benefits.

157. The Commission is satisfied that the quantitative analysis of costs and benefits of mobile termination regulation is robust with respect to changes in key assumptions.

Definitional and implementation issues concerning 2G and 3G

Service description

158. The description of the Mobile Termination Service recommended in the Final Report was as follows:

Termination (and its associated functions) on a cellular telephone network of voice calls originating on a fixed telephone network where the cellular telephone network technology used for the termination of those calls is not third generation or later technology.

Exclusion of 3G voice calls

159. In the Final Report, the Commission's approach to distinguishing between different generations of cellular network technology (2G and 3G) was driven by a wish to create efficient investment incentives in the face of dynamic efficiency risks. While the Commission acknowledges that the 3G definition in the Act, which is based on ITU standards, is adequate for some designated services, the Commission did not consider that it was a useful means of addressing the Commission's concerns about investment incentives.
160. Instead, the Commission focused on drawing a generational distinction between cellular technologies based on the degree to which the method of delivering voice calls could be said to be a significant technology upgrade.

Summary of submissions on the Final Report

161. Telecom considers that its 027 CDMA network is a 3G network as defined by the ITU, and that all voice calls terminated on that network are 3G voice calls.²⁶ Therefore, the only 2G voice calls that Telecom currently terminates are those calls made to its 025 TDMA network, which it plans to decommission in 2007.
162. Telecom submits that:²⁷
- it is looking to further enhance its 1xRTT/EVDO network with EVDO Rev A;
 - it is unlikely to ever introduce EVDV; and
 - EVDO Rev A delivers the same voice functionality to end-users as EVDV.
163. As a consequence, Telecom believes that the impact of the proposed regulation on Telecom is disproportionate and distortionary, penalising Telecom for being the first to offer 3G services.²⁸

²⁶ Telecom submission, 1 July 2005, Appendix 2.

²⁷ *ibid*, Appendix 2.

164. TelstraClear considers that, as a general principle, regulation should avoid technical specifications and exclusions based on technology, and that regulation should be service based.²⁹
165. TelstraClear suggests that an appropriate carve-out would be to regulate the termination of circuit-switched voice calls conveyed over 2G and 3G networks, while excluding 3G data services (including data-based voice services, such as ‘Push to Talk’) from regulation.³⁰
166. Telecom and TelstraClear submit that technology-specific regulation is likely to create ongoing difficulties. For some time, both 2G and 3G voice services will be offered with users possibly switching between 2G and 3G services either between or during calls. Both Telecom and TelstraClear believe this will create confusion for network operators and, in particular, end-users, who will have no way of knowing what type of network technology is carrying their voice call.
167. Telecom, TelstraClear and TUANZ³¹ submit that it is not possible to clearly and robustly distinguish between 2G and 3G voice calls, such that 3G voice calls are excluded from regulation on the basis of the network technology used to terminate the call, and that such a regime would be unworkable.

Conclusions

168. The Commission accepts that the technological distinction it proposed in the Final Report was not sufficiently clear, nor sufficiently aligned with industry practice to produce a transparent distinction between cellular technologies.
169. The Commission accepts that voice calls delivered on the Telecom 1XRTT and EVDO networks can be properly characterized as 3G services.
170. The Commission concludes that it is difficult to align technology characteristics with the investment incentives it sought to create in attempting to distinguish between different generations of cellular network technology.
171. The Commission understands that the terms ‘2G’, ‘3G’ and occasionally ‘4G’ are falling out of favour within ITU-R documentation, primarily because the technologies are evolving so rapidly that they do not fit readily into broad generational categories. The distinction between 1G and 2G was easy and very obvious, being analogue versus the first digital systems. As digital technologies have developed, the advances from one technology to another are being seen as more evolutionary than revolutionary.
172. Other technology-specific means of distinguishing between the two network technologies have been suggested, in particular, between packet-switched and circuit-switched voice calls. As noted in the Final Report, this could provide a clear

²⁸ *ibid*, para 75.

²⁹ TelstraClear submission, 1 July 2005, page 1.

³⁰ *ibid*, page 3.

³¹ TUANZ submission, 1 July 2005.

distinction. It would not, however, have had the incentive properties the Commission was looking for. At present, the circuit/packet switching distinction has little correlation with either:

- the 2G/3G distinction (3G may use either packet and circuit switching for voice services); or
- investment incentives that might minimize harmful dynamic efficiency effects (it may be important to preserve incentives for investment in packet switched voice networks).

173. In addition, incentives for mobile network operators to introduce packet switched voice are not yet well understood. The Commission considers that it would be premature in these circumstances to define the scope of regulation by including circuit-switched technology while excluding packet-switched technology.

Dynamic efficiency considerations

174. The Final Report examined the impact of regulation on incentives for mobile operators to innovate and invest in newer, more risky technologies, such as those required to support 3G services. The Final Report noted that the potential outcome of regulated mobile termination rates has not deterred Telecom and Vodafone from proceeding with plans to invest in 3G technology, but that there remained risks that there could be a significant loss to consumers from more limited and slower deployment of 3G technology as a response to the regulation of 3G termination rates. Accordingly, the Final Report concluded that regulating the termination of voice calls using 3G or later technology should not be recommended.
175. The Minister's reconsideration direction required the Commission to give further consideration to alternatives to distinguishing between 2G and 3G technologies that are workable, and have merit and dynamic efficiency benefits. The Commission quantifies benefits and detriments where possible. However, evaluating dynamic efficiency benefits precisely in quantitative terms is difficult. The Commission has therefore undertaken a qualitative assessment of the dynamic efficiency considerations highlighted by the Minister in his request for reconsideration and updated the assessment of the risks that regulation may pose to investment incentives. In terms of the overall recommendation, the Commission must exercise its judgement and assign appropriate weight to dynamic efficiency considerations.

Investment incentives

176. The expansion of regulation can have a variety of different effects on the incentives to invest. The incentives will depend on the nature of the regulation and how it affects the desire to invest by businesses. The impact on investment incentives may be either positive or negative. For example, the regulation of mobile termination rates may lead to more investment in fixed infrastructure to support a more economically efficient level of fixed-to-mobile calls.
177. The operation of telecommunications networks is capital intensive and the industry is characterised by significant sunk investments. In considering the case for, and the actual implementation of, regulation, the Commission is committed to allowing investors a reasonable return on their investments. Failure to preserve incentives to invest will lead to an outflow of capital, as assets are not maintained or replaced over time. Such a lack of investment can generate substantial consumer detriments, through degradation or loss of services.
178. Regulation imposes risks on investors, and can influence investment decisions, both by regulated firms (access providers, where regulation pertains to access) and by those firms obtaining regulated access (access seekers). The level of risk created by regulation, as well as the incidence of that risk, depends on how the regulation is implemented and maintained. For example, Ergas, Hornby, Little, and Small suggest

three ways a regulator can avoid imposing an excessive level of risk on a regulated industry.³²

- implement regulation swiftly and consistently;
- be consistent across industries; and
- maintain a long-term responsibility for and commitment to the regulation.

These factors indicate that certainty, consistency and stability are important factors in the regulatory environment.

179. There are a number of key considerations to which the Commission has regard, when considering the case for regulatory intervention. These include:
- the approach to determining regulated access prices (including measures to minimise the risk that access providers are under-compensated);
 - the importance of preserving incentives for efficient investment;
 - the threshold principle of market power; and
 - technological neutrality.
180. The Final Report recognised the precedent effect of regulation. For example, in submissions to the Minister on the Final Report, Infratil indicated that it considered the Commission's recommendation to regulate would act as a general deterrent to infrastructure investment, with investors facing increased uncertainty and hence perceived risk.³³ Such detriment could arise from a more limited deployment or a deferral in deployment of other new technologies that would bring benefits to the end-users of telecommunications services.
181. The Commission also acknowledges that in setting regulated access prices, there is an asymmetric risk to dynamic efficiency in choosing a price that does not recover the forward looking costs of access. That is to say, the risks to the long-term interests of end-users from under-recovery of efficient costs, represented by a loss of incentives for future efficient investment, will normally be greater than the risk to end-user interests of an access price that over-recovers efficient costs.
182. In a number of determinations relating to designated access services under the Telecommunications Act, the Commission has established access prices that are based on a quartile approach to a range of benchmarks that minimises the risk of inefficiently low access prices. In Decision 477, the Commission considered a range of international price benchmarks in setting an initial interconnection price, and selected a rate at the 75th percentile. A similar approach was taken in respect of retail-minus discounts in the initial wholesale determination. In its Final Report on mobile termination, the Commission has again used a benchmark rate at the 75th percentile as a proxy for the regulated mobile termination rate. By selecting the 75th percentile of

³² H. Ergas, J. Hornby, I. Little and J. Small, *Regulatory risk*, paper presented at the ACCC Regulation and Investment Conference, 26-27 March 2001.

³³ Infratil submission, 23 June 2005, paragraph 4.

the benchmarks, rather than the median, the initial mobile termination rate used for the factual leans towards the over-recovery of costs.

183. In this way, the Commission aims to minimise the impact its regulatory decisions have on incentives for efficient investment. The Commission considers that incentives for efficient investment will remain as long as investors have the expectation of being able to earn a reasonable return on their investments.
184. Mobile termination rates appear to be significantly above the cost of supplying such services, indicating the presence of market power enjoyed by the suppliers of mobile termination services. This was a threshold issue in the Commission's investigation; in other words, the finding of limited competition was a necessary, though not sufficient, condition for recommending regulation.
185. While the recommendation for regulation may be perceived as increasing the risk of regulation in other sectors, the Commission considers that such a perceived risk is mitigated by the thresholds contained within the Act (and within the Commission's approach to Schedule 3 investigations), which limit regulatory interventions to circumstances in which market power exists and intervention best promotes competition for the long-term benefit of end-users.
186. In such circumstances, the Commission considers that regulation will be appropriate, for example, either in terms of constraining market power directly, or in terms of reducing barriers to entry. In the case of mobile termination, the Commission considers that regulation of mobile termination rates is likely to provide significant benefits to end-users, compared to a situation in which there is no regulation.
187. The Commission considers that the principle of 'technological neutrality' is also important. Concerns have centred around the voice call termination service on mobile networks. Unless there is something specific about 3G technology that undermines the market power identified in respect of termination services, the regulatory decision should be indifferent as to the type of technology used to deliver termination services.³⁴
188. In the Final Report, the Commission expressed a concern about regulating a risky, new, unproven technology not yet deployed – which was how it regarded Vodafone's proposed W-CDMA network at that stage. These factors and the perceived difficulty of predicting the success of the technology led the Commission to be cautious in its approach to regulating 3G technology.
189. Since the Final Report, the Commission has had the benefit of studying 3G rollouts in other countries and has also accepted that both the Vodafone and Telecom 3G networks are in the advanced stages of deployment and operation in New Zealand. The Commission does not therefore consider that its previous concern relating to 3G being a risky, new technology is still relevant.

³⁴ However, it is possible that the way in which regulation is implemented may be influenced by technological considerations. For example, in pricing a 'new' technology, it might be appropriate to use a higher cost of capital to reflect higher risks associated with its deployment.

Network roll-out plans

190. In the Final Report, the Commission concluded that the decisions of Telecom and Vodafone on whether or not to build 3G networks were not likely to be influenced by a decision to regulate termination of fixed-to-mobile voice calls. However, the Commission did consider that there was a remaining risk that regulation of 3G termination might result in a more limited deployment of 3G networks, or a partial deferral in deployment. Furthermore, it acknowledged that the loss of benefits to end-users of even a limited delay or restriction on deployment might be significant.
191. However, since the Final Report was released, Vodafone has partially rolled-out, and begun operating, its 3G network. On 10 August, it announced that 3G coverage was available in Auckland, Whangarei, Hamilton, Christchurch, Wellington, Queenstown, Dunedin, Hastings, Napier, Nelson, New Plymouth, Palmerston North, Rotorua, Taupo, Tauranga, Mt Maunganui, Wanganui, Pauanui, and Whangamata. While this still leaves areas of the country, possibly including areas within the listed towns and cities, without coverage, Vodafone has deployed 3G coverage to the vast majority of the population. Furthermore, Vodafone's underlying investment decision affecting the deployment is likely to have been made well before the release of the Final Report, meaning it made the decision to deploy despite the uncertainty over the final nature of the regulatory environment.
192. Telecom's EV-DO network essentially provides the same functionality as Vodafone's W-CDMA 3G network, and allows Telecom to offer what it calls T3G mobile broadband. On 10 June 2005, Telecom announced that mobile broadband will be available by Christmas 2005 in towns and cities including Bay of Islands, Whangarei, Hamilton, Tauranga, Whakatane, Rotorua, Tokoroa, Gisborne, Napier, Hastings, Ohakune, National Park, Turangi, New Plymouth, Stratford, Hawera, Wanganui, Palmerston North, Masterton, Martinborough, Carterton, Greytown, Levin, Waikanae, Paraparaumu, Porirua, Upper Hutt, Lower Hutt, Picton, Nelson, Blenheim, Kaikoura, Rangiora, Westport, Greymouth, Ashburton, Timaru, Oamaru, Dunedin, Balclutha, Gore, Feilding, Invercargill, Auckland, Wellington, Christchurch, Queenstown, Wanaka, Taupo, and Coromandel. In addition, smaller places nearby like Huntly, Te Puke, Te Rapa, Thames, Ngongotaha, Helensville, and Orewa will also be covered.
193. These announcements suggest that the risk of regulation of mobile termination rates in New Zealand has not been a major consideration in the decisions of the mobile operators on the scope and timing of their 3G roll-outs. Instead, as discussed in the Final Report, the Commission believes that the primary drivers of the 3G investments made and proposed are the search for competitive advantage through functionality and technological differentiation. The greater capacity offered by 3G networks is being used to broaden the range and improve the quality of data services that can be offered to end users, and 3G investment is likely being driven by the future growth opportunities in data services in particular. Consequently both Vodafone and Telecom are heavily promoting their 3G video and broadband services, which would not be subject to regulation.
194. Given these indicators of the investment intentions of the mobile operators and the focus on the promotion of data services for which no regulation is proposed, the Commission now considers there is no material risk that the regulation of 3G mobile

termination would have a significant impact on the deployment of 3G networks. Existing and announced deployment is such that the vast majority of the population can or will shortly be able to access 3G mobile services.

195. Frontier Economics (as part of Vodafone's submission on the Commission's previous draft report) considered the possible impact of a one-year delay in 3G deployment throughout New Zealand. This suggested that such a delay would generate an economic loss of between \$80.5 million (total surplus) and \$105.6 million (consumer surplus). It is apparent, however, that this is an extreme hypothetical case, which fails to explain the largely complete roll-out of both networks.
196. It has been argued that 3G voice termination should be priced at a premium to 2G voice termination for an initial period. The price paths proposed by Telecom and Vodafone in their offers effectively allow such a premium by setting a blended 2G/3G rate that reduces over time. However, the view of both vendors and purchasers of 3G equipment, including Hutchison in Australia,³⁵ is that 3G networks have lower unit costs.³⁶ The Commission therefore does not agree that there is any justification for an allowance or 'premium' attributable to 3G termination, above 2G cost-based pricing.

Conclusions

197. Given that the 3G networks of Vodafone and Telecom will, by the end of 2005, be able to reach the vast majority of the population, and that the new 3G data services supported by those networks will not be regulated, the Commission considers that the likely dynamic efficiency detriment to investment in 3G services caused by regulating termination rates is small. In addition, the Commission considers that the adverse precedential effect of regulating 3G voice calls is also small, given that regulation is linked to circumstances where clear market power exists and intervention is likely to promote competition for the long-term benefit of end-users. Furthermore, the Commission recognises the need for investors to obtain a reasonable return.
198. The Commission concludes that the estimated consumer welfare benefit of regulating mobile termination rates given by the CBA is sufficient to outweigh any residual dynamic efficiency detriment from regulating 3G voice call termination.

³⁵ Hutchison, *Submission to the Australian Competition and Consumer Commission: Access Undertaking domestic digital mobile terminating access service*, October 2005, p18

³⁶ http://www.umts-forum.org/servlet/dycon/ztumts/umts/Live/en/umts/3G_Network_business-case
<http://news.earthweb.com/wireless/article.php/2225261>
http://it.asia1.com.sg/newsdaily/news002_20040924.html

Consideration of the commercial offers

199. In weighing regulation against the alternative of the commercial offers, the Commission measures the flow of costs and benefits associated with regulation where these are able to be quantified. This section discusses other features of the comparison that the Commission considers are relevant, but that are not quantifiable.
200. As part of its offer to reduce mobile termination rates, Telecom has offered to pass through 100% of the reductions in termination rates to retail fixed-to-mobile prices. The Commission understands that this commitment by Telecom only applies if mobile termination rates are not regulated. The Commission also understands that Telecom has committed to passing through to Telecom customers, in the form of lower retail fixed-to-mobile calling prices, the entire amount of the reduction in termination rates for calls originating on the Telecom fixed PSTN and terminating on the Telecom and Vodafone mobile networks.
201. The means proposed to measure compliance with that commitment is a comparison of Telecom's average fixed-to-mobile price at the end of each financial year. Achievement of 100% pass-through is an important feature of Telecom's offer and monitoring the delivery of this would be straight-forward if Telecom were to uniformly reduce prices for all its customers. Telecom has indicated, however, that it would reserve the right to discriminate in how it reduces its rates.³⁷ It could, therefore, achieve the target pass-through by differing pass-through levels by customer type or contract type. This means that effective monitoring would be demanding, and that undershooting the target, just as overshooting, would be a real possibility. It also means that competition may not be promoted to the extent that it would be by a universal price reduction. The difficulty of monitoring is likely to be compounded by the effect of other price changes unrelated to the pass-through target.
202. Since the Commission released its mobile termination Issues Paper in June 2004, the listed residential retail rates of three of the seven retailers surveyed have reduced, whilst Telecom's rate, which was the highest by a significant margin (together with TelstraClear's), has remained unchanged. Telecom does have lower listed residential fixed-to-mobile rates, but these apply to Telecom customers on its Anytime plans who pay a higher monthly fixed charge in return for lower variable call charges. The effective price of fixed-to-mobile calls in these circumstances will depend on the volume of calls made, and the portion of the fixed charge allocated to this call type; they will not be captured by reliance solely on the average fixed-to-mobile price.
203. Presumably, the Telecom and Vodafone offers could be embodied in legally enforceable contracts with the Government. While certain elements of the offers, such as the lower termination rates, would be given effect through interconnection agreements with fixed-to-mobile providers, it is likely that in practice the Telecom pass-through commitment would have to be monitored and enforced by the Government. Suitable mechanisms would be needed to resolve any disputes that may

³⁷ *Clarification of mobile termination offer made to Minister*, letter from Bruce Parkes to Osmond Borthwick, 30 August 2005.

arise regarding compliance with the commitment, possibly including appropriate penalties for non-compliance.

204. Telecom has entered into agreements with retailers of fixed-to-mobile calls that give them the initial reduced rate outlined in its commercial offer. Telecom has also stated that if its commercial offer were accepted as an alternative to regulation, it would offer a contract extension to these retailers at the future price points and timeframes set out in the offer. Such contracts should have the effect of binding Telecom on the mobile termination aspect of the offer, if they were of sufficient term and specificity. While contracts of this nature would be unusual, as it is not normal practice for telecommunications operators in New Zealand to enter into binding agreements for periods as long as five years, there is no reason to believe that there would be any problems with such an approach.
205. As far as the Commission is aware, Vodafone has not entered into any agreements that would guarantee retailers would get its offer of reduced termination rates if there were no regulation of mobile termination, though it could be assumed Vodafone would do so in a suitable form that would ensure that the offered reductions would be achieved.
206. The Commission concludes that it is feasible to give effect to the Telecom and Vodafone commercial offers through some combination of enforceable contractual undertakings. Careful definition of the Telecom pass-through commitment would be required, as would effective monitoring and dispute resolution mechanisms.

Pass through of benefits to end-users

Background

207. In its Final Report, the Commission proposed regulating mobile termination rates on the basis that such regulation is likely to increase competition in the retail market for tolls and fixed-to-mobile calls, providing significant benefits to end-users. In considering whether regulation would deliver such benefits, a key factor is the extent to which regulated reductions in termination rates are likely to be passed through into retail fixed-to-mobile calling prices.
208. The Final Report did not propose any mechanism requiring pass-through of mobile termination rate reductions into retail prices. However, the Commission noted that pass-through rates are likely to reflect competitive conditions, and that a number of factors, including the regulation of cost-based mobile termination rates, are likely to promote competition in the market in which fixed-to-mobile calls are supplied. This is expected to result in an increasing level of pass-through over time, and hence an increasing level of benefits delivered to end-users.
209. Having considered the Commission's Final Report, the Minister has requested that the Commission:³⁸
- ... give further consideration to how best to ensure that end-users benefit from reductions in wholesale mobile termination rates.
210. In this section, the Commission further considers the question of fixed-to-mobile pass-through rates, including updated information on the relationship between fixed-to-mobile retail prices and mobile termination rates in New Zealand.

Summary of issue

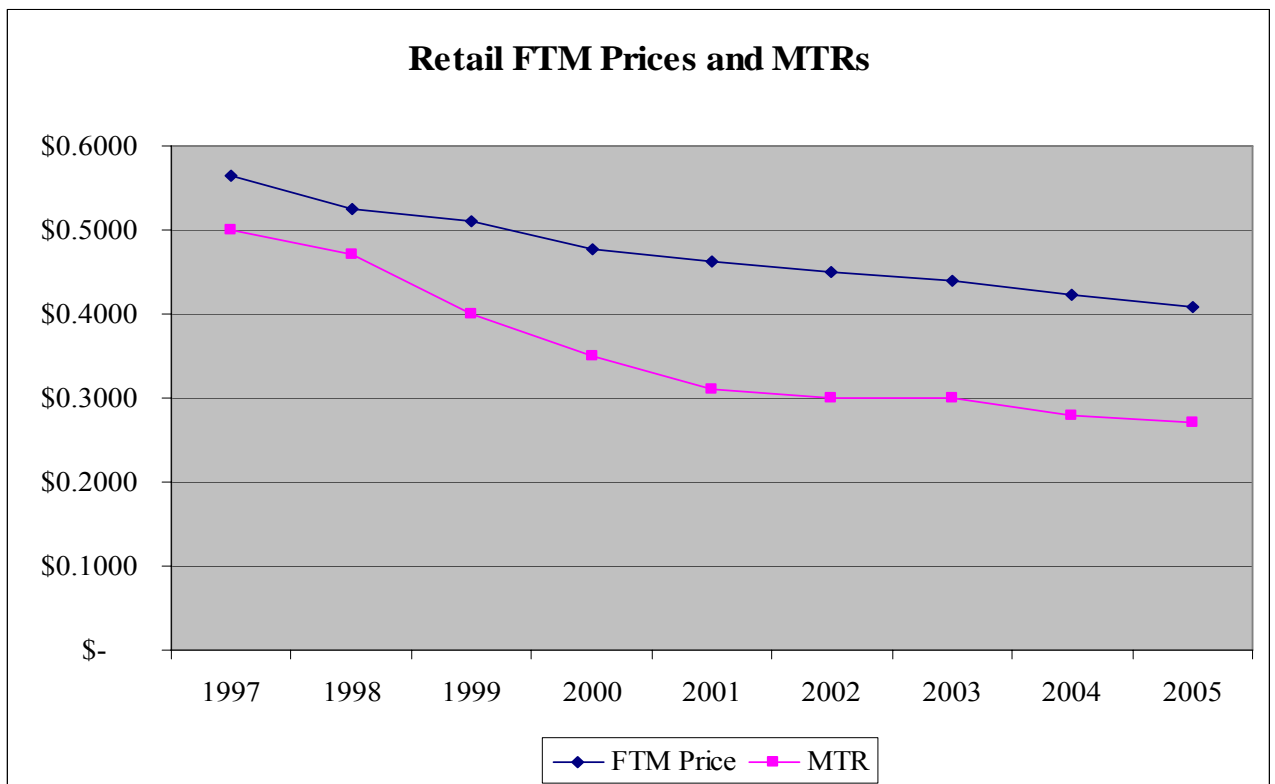
211. The focus of the Commission's investigation has been on mobile termination rates. These are the rates that mobile operators charge fixed operators for carrying (terminating) a call from a point of interconnection to a mobile subscriber. Mobile termination is therefore a wholesale input into the provision of retail calling services, including fixed-to-mobile calls.
212. The fixed-to-mobile pass-through rate typically refers to the relative movement in retail fixed-to-mobile prices and mobile termination rates. For example, a 1 cpm reduction in mobile termination rates that results in a 0.5 cpm reduction in retail prices equates with a 50% pass-through rate.³⁹

³⁸ Letter from Hon David Cunliffe to Douglas Webb, 09 August 2005.

³⁹ Another related term that is often used is the fixed retention rate. This is the difference (in dollar or percentage terms) between the retail call price and the wholesale mobile termination rate, ie the margin retained by the fixed operator. For example, in 2004/05, the average retail fixed-to-mobile price in New Zealand was 40.9cpm, while the average mobile termination rate was 27 cpm. This indicates a fixed retention margin of 13.9 cpm, which is equivalent to 34% of the retail price.

213. Figure 2 summarises movements in average retail fixed-to-mobile prices and mobile termination rates in New Zealand over the period 1996/97-2004/05. This shows that average retail fixed-to-mobile prices have fallen from around 56 cpm in 1996/97, to just under 41 cpm in 2004/05, while average mobile termination rates have fallen from 50 cpm to 27 cpm over the same period. This is equivalent to an average fixed-to-mobile pass-through rate over the period of 68%.⁴⁰

Figure 2: Fixed-to-mobile retail prices and mobile termination rates in New Zealand



214. Mobile termination rates are an important cost faced by fixed operators in supplying fixed-to-mobile calls to retail customers. In an increasingly competitive market for fixed-to-mobile calls, competition between the fixed operators should ensure that an increasing proportion of any change in these costs is passed through into retail rates.
215. In the Final Report, the Commission noted that although historic levels of fixed-to-mobile pass-through (over 1996/97-2003/04) were estimated at around 65%, there are a number of reasons to suggest that this rate will increase over time. This was based on a view that the retail market in which fixed-to-mobile calls are supplied is becoming increasingly competitive. For example, the introduction of carrier pre-selection allows customers to switch easily away from their local access supplier (ie without having to dial additional prefixes), while the availability of regulated resale

⁴⁰ The fixed-to-mobile pass-through rate essentially describes the relative slopes of the lines in Figure 2, whereas the fixed retention margin describes the gap between the two. It is evident from Figure 2 that the margin between these two rates (ie the fixed retention rate) has increased over the period.

enables retail competitors to offer a wider range of bundled services (addressing possible customer inertia when faced with multiple bills). In addition, the Commission noted that regulation introducing cost-based mobile termination is expected to promote competition between fixed-only and integrated fixed/mobile operators.

216. These pro-competitive developments are expected to lead to increasing levels of fixed-to-mobile pass-through over time. This was reflected in the assumed pass-through rates embodied in the Commission's cost-benefit analysis. A higher fixed-to-mobile pass-through rate will result in end-users receiving a greater benefit from any given reduction in mobile termination rates.
217. Pass-through rates have varied between providers. For example, since 1997/98, Telecom's average retail fixed-to-mobile price is estimated to have declined from 52.5 cpm to 41.4 cpm (-11.1 cpm), while the average mobile termination rate has fallen from 47 cpm to 27 cpm (-20 cpm). In other words, Telecom has historically passed through only around 55% of reductions in mobile termination rates.⁴¹ By comparison, other fixed-to-mobile providers have reduced their margins at a faster rate, as summarised in Table 7 below.

Table 7: Estimated fixed-to-mobile pass-through rates by operator

	Average retail fixed-to-mobile price			Average mobile termination rate
	Telecom	TelstraClear	Others	
1997/98	\$0.5249		\$[]	\$0.47
1998/99	\$0.5105		\$[]	\$0.40
1999/00	\$0.4833	\$[]	\$[]	\$0.35
2000/01	\$0.4748	\$[]	\$[]	\$0.31
2001/02	\$0.4657	\$[]	\$[]	\$0.30
2002/03	\$0.4535	\$[]	\$[]	\$0.30
2003/04	\$0.4315	\$[]	\$[]	\$0.28
2004/05	\$0.4140	\$[]	\$[]	\$0.27
Δ	-\$0.1109	-\$[]	-\$[]	-\$0.20
Pass-through	55%	[]%	[]%	

218. Vodafone has also previously submitted that the Commission should impose a pass-through condition. For example, in its submission on the Commission's draft report:⁴²

... Vodafone argues that ... pass-through of price reductions by fixed-line operators should be a condition of access to regulated lower prices.

⁴¹ Telecom's fixed-to-mobile price reductions have been uneven between residential and business customers. Telecom average residential fixed-to-mobile price declined from []cpm in 1997/98, to []cpm in 2004/05 (-[]cpm). This represents a pass-through rate of []%.

⁴² Vodafone submission, 30 November 2004, paragraph 23.

219. Vodafone was particularly concerned about the possible asymmetric impact of mobile termination regulation on a mobile-only operator compared to an integrated fixed-mobile operator. If the latter was able to retain a significant proportion of any regulated reduction in mobile termination rates, the integrated operator might be able to benefit from such regulation, relative to the non-integrated operator.
220. Conversely, fixed operators such as TelstraClear have argued that a regulated pass-through condition is not required, and that such a condition would be at odds with the designation of services under the Act.⁴³

A required pass-through term is likely to distort retail pricing structures and be difficult to implement. We consider that the introduction of a pricing principle that ensures mobile termination prices are more reflective of cost is likely to be the most effective way to generate effective competition in the fixed-to-mobile services market. This will reduce the ability of vertically-integrated fixed and mobile operators to raise the costs of competitors in the fixed calling services market.

In addition, TelstraClear considers that the Commission has no power under the Act to impose a condition on a determination requiring any reduction in prices for input services to be passed on to end-users. The Commission's determination powers are limited to the terms of supply of designated and specified services from access providers to access seekers (see for example section 20(1) and (2)(a)). If Parliament had intended to confer such power on the Commission it would have done so in express terms.

Recent overseas developments

221. In Australia, access providers may voluntarily lodge access undertakings with the ACCC specifying the terms and conditions on which they agree to supply a regulated service. The ACCC can accept or reject the undertaking. Two mobile operators have recently lodged access undertakings for a mobile termination access service that contain proposals by the operators to link lower mobile termination rates to the behaviour of access seekers in passing through the reductions into retail fixed-to-mobile prices.

Vodafone Australia undertaking to the ACCC

222. In a revised undertaking to the ACCC,⁴⁴ Vodafone Australia has proposed a "fixed-to-mobile pass-through safeguard", whereby, as a pre-condition to gaining access to Vodafone's proposed lower mobile termination rates, an access seeker would have to reduce its retail fixed-to-mobile prices. The proposed safeguard would set an adjustment path for retail fixed-to-mobile prices, from the current average retail price of around A38.5 cpm, to a target retail price of A21.5 cpm, over a three-year period. This path would involve three equal annual reductions in the retail fixed-to-mobile price of A5.78 cpm.⁴⁵

⁴³ TelstraClear Limited, *Submission in Response to Commerce Commission Issues Paper: Schedule 3 Investigation into Regulation of Mobile Termination*, 19 July 2004, page 38.

⁴⁴ Vodafone, *Submission to the Australian Competition and Consumer Commission: Access Undertaking Mobile Termination Access Service*, 23 March 2005.

⁴⁵ These annual reductions imply a pass-through rate of 357%.

223. Vodafone Australia appears to have based the target fixed-to-mobile price (A21.5 cpm) on an estimate by the ACCC of the fixed origination costs of around A5 cpm, added to Vodafone Australia's own estimate of a cost-based mobile termination rate of A16.15 cpm. In other words, their safeguard would result in what Vodafone Australia considers to be approximately cost-based fixed-to-mobile prices.
224. The ACCC has released a consultation document, inviting submissions on the Vodafone undertaking. Submissions were received from Optus, Telstra, and AAPT. Of these, Telstra and Optus commented on the proposed fixed-to-mobile pass-through safeguard. Telstra argued that the proposed safeguard should be rejected by the ACCC, on the basis that it would be inappropriate for an access undertaking to extend to retail price regulation. Telstra also noted that the ACCC has previously extensively considered the need for a pass-through mechanism, and decided against incorporating such a mechanism in its declaration of the mobile termination service.
225. Optus noted that the proposed safeguard would require fixed-to-mobile retail prices to fall by 45% over the three-year period, and argued that the forced reduction in fixed-to-mobile margins would result in an increase in toll prices in order to restore margins. Optus submitted that there would be some fixed-to-mobile pass-through, even in the presence of fixed operator market power.

Hutchison undertaking to the ACCC

226. Hutchison submitted an undertaking to the ACCC in October 2005 in which it has revised its position on the pass-through issue.⁴⁶

In its previous submissions to the Commission, Hutchison advocated the need for a pass through mechanism to ensure a reduction in fixed-to-mobile retail prices. However, pass through mechanisms, including the fixed-to-mobile safeguard proposed by Vodafone in its MTAS undertaking, have been strongly rejected by fixed-line operators such as Optus and Telstra. In the light of this opposition, Hutchison considers that a reduction in MTAS charges to 18 cpm for Non-PMTS {fixed-to-mobile} Calls is a practical means of testing whether or not an appropriate degree of pass through will occur in the absence of a specific pass through mechanism.

The Non-PMTS Undertaking expires on 30 June 2006, at which time Hutchison will review the retail price of fixed-to-mobile calls by reference to both the declining price of the MTAS and the effectiveness of the revised retail price control scheme.

227. Hutchison proposed a greater reduction in mobile termination rates (MTAS charges) to 12 cpm for PMTS (mobile-to-mobile) calls (under reciprocal agreements), arguing that this rate would be an efficient cost-based price for the terminating service. Implicitly, Hutchison's two tier undertaking, with higher prices for terminating fixed-to-mobile calls, is designed to signal to fixed-to-mobile providers who demonstrate pass-through of the first round of mobile termination rate reductions that there will be a second round of reductions to bring the rate closer to cost.

⁴⁶ Hutchison, *Submission to the Australian Competition and Consumer Commission: Access Undertaking domestic digital mobile terminating access service*, October 2005, p11

228. The ACCC has yet to release its decisions on whether to accept these undertakings, although it has made some interim determinations setting an interim termination rate that Vodafone has to charge Hutchison and AAPT.

Conclusions

229. In the Final Report, the Commission noted that historic pass-through levels, while relatively low, have been increasing over time, and this trend appears to have continued in 2004/05. Table 8 below summarises historic changes in fixed-to-mobile pass-through rates, across different periods. The Commission reiterates its caution in the Final Report in respect of interpreting changes in historic pass-through rates over short periods.⁴⁷

Table 8: Movements in fixed-to-mobile pass-through rate

Period	Average pass-through rate
<i>3-year periods</i>	
1996/97-1998/99	55%
1998/99-2001/02	61%
2001/02-2004/05	137%
<i>4-year periods</i>	
1996/97-2000/01	54%
2000/01-2004/05	138%
<i>overall</i>	
1996/97-2004/05	68%

230. As competition increases in the downstream market, pass-through rates are likely to increase and more benefits will flow through to end-users.
231. The Commission considers competition is likely to increase over time due to the introduction of both carrier pre-selection, making it easier for customers to switch suppliers, and regulated resale, allowing retail competitors to offer services bundled with line rental. In addition, the introduction of cost-based termination is expected to promote competition between fixed-only and integrated fixed/mobile operators.
232. The Commission has further reflected on Telecom's position in the market as the largest provider of fixed-to-mobile calls and the inherent advantage of being an integrated operator. Based on the past relationship between mobile termination rates and fixed-to-mobile prices, the Commission considers that it is likely that Telecom will pass through a substantial part of any benefit it derives from reduced mobile termination rates. Nevertheless, there remains a risk that Telecom, as an integrated operator, may instead use its position to increase its fixed-to-mobile margin or further enhance its advantage by discriminating between customers and passing through most

⁴⁷ See Final Report, footnote 151.

of the benefits to a particular category or categories of customer. Outcomes of this kind have the potential to adversely affect competition in related markets.

233. The Commission considers it appropriate to minimise these risks. This could be done by requiring the Commission, when considering an application from an access seeker for mobile termination, to consider the extent of pass-through as an additional matter regarding the application of section 18. The additional matter would be similar to those already specified in other service descriptions in Schedule 1. For example, with applications for National Roaming, in considering the application of section 18, the Commission must establish roll-out milestones and roll-out thresholds that ensure that the access seeker has strong incentives to roll-out its national mobile network in an efficient and timely manner.
234. The Commission considers it appropriate that, it should have regard to the likely competitive effects of an access seeker's use of the margin gain from the mobile termination rate reduction.
235. In conclusion, having reconsidered the issue of fixed-to-mobile pass-through, the Commission's view remains that a regulated reduction of mobile termination rates is likely to be substantially passed through in a number of forms to the benefit of end-users, with the level of pass-through increasing over time as competition between fixed operators develops. Nevertheless, to minimise the risk that this does not occur, the service description includes, as an additional matter that must be considered regarding the application of section 18 when making an access determination, that the Commission consider the commitment proposed by the access seeker as to how it will use the revenue from reduced mobile termination rates for the promotion of competition for the long-term benefit of end-users.
236. Under regulation, fixed-to-mobile providers will obtain the mobile termination service at a price intended to emulate the price that would be available in an effectively competitive wholesale market. Accordingly, competition can be relied on to constrain downstream retail prices, and measures to achieve pre-determined retail outcomes are unnecessary.
237. The requirement that the Commission consider the commitment of an access seeker to ensure a pro-competitive outcome will provide a level of assurance, not as to specific outcomes, but rather that the access seeker is responding to the competitive incentives provided by a significant regulated reduction in its input costs.

Submissions made on the Final Report

Introduction

238. The Commission has, as requested by the Minister, reviewed all the submissions made to the Minister on the Final Report. In this section the Commission comments on significant criticisms made by:
- Marsden Jacobs Associates (MJA) in their submission on behalf of TelstraClear; and
 - Professor Hausman in his submission on behalf of Telecom.
239. Other issues raised in submissions were either adequately dealt with in the Final Report, or have been addressed elsewhere in this report.

MJA submission

240. MJA's submission focused on the Commission's assessment of the costs and benefits of regulating mobile termination rates.
241. MJA comment that the main amendment made in the Final Report to the draft CBA is the inclusion of a measure of the detriments that might be expected as a result of reduced mobile subscription in the regulatory factual (the "waterbed effect"). According to MJA, the Commission's revised approach represents a more complete analysis of the possible effects of regulation:⁴⁸
- In principle, we find that the Commission's new approach is improved compared with that in the draft, since it makes a more complete analysis of the market.
242. However, MJA argue that the magnitude of the waterbed effect, while difficult to precisely measure, will likely be less than the Commission has allowed for, due to the integrated nature of Telecom and the likely interactions between Telecom and Vodafone with respect to mobile customers. MJA argue that a mobile pass-through rate of 25% should be used (as opposed to the 50% assumption used in the Commission's baseline).
243. MJA also raise a couple of other specific issues, including the movement of retail mobile prices ("ARPU's") over time, and the use of a constant elasticity demand curve.
244. According to MJA, the Commission's CBA is consequently likely to understate the net benefits from regulation.
245. The MJA submission concentrates largely on assumptions made in the Final Report on various CBA parameters. Their key submission is on the 'waterbed effect', and in

⁴⁸ MJA submission to the Minister (30 June 2005), paragraph 13.

particular the assumption made about the extent to which reductions in mobile termination rates are recovered or offset by (relative) increases in retail mobile prices (ie, the ‘mobile pass-through rate’).

246. On the mobile pass-through assumption, MJA argue that the vertically integrated nature of Telecom is likely to mean that Telecom will face a lesser incentive to raise retail mobile prices, and will hence dampen any waterbed effect. MJA argue that a mobile pass-through rate of 25% should be used (as opposed to the 50% assumption used in the Commission’s baseline).
247. The Commission considered the issue of ‘mobile pass-through’ at paragraphs 604-610 of the Final Report, where consideration was given to the same issues raised in the MJA submission to the Minister. There does not appear to be anything new in the MJA submission to the Minister that would necessitate a change to the Commission’s position on the waterbed effect.
248. MJA agree with the inclusion of an “offsetting fixed-to-mobile effect”, as per the Final Report paragraph 625-632.
249. MJA argue that the ARPU which is used as a proxy for mobile prices is likely to be conservative, and is also likely to increase over time (although at paragraph 44 of their submission, MJA acknowledge that ARPUs could also decrease over time). According to MJA, increasing ARPU over time will result in a smaller waterbed effect. MJA acknowledge the difficulties in verifying and comparing ARPUs (as they are operator-specific), and note that changes in ARPU have a minor impact on the results of the CBA.
250. The final point raised by MJA relates to the use of the constant elasticity demand curve in allowing for an offsetting effect of regulation on mobile subscription. MJA demonstrate the fixed-to-mobile effect on mobile subscription by way of a diagrammatic outward shift in the subscription demand curve. While this does represent the offsetting effects on mobile subscription, the Commission included a proxy for such an offset, based on material presented in an earlier submission by Professor Hausman. This is discussed at paragraphs 625-632 of the Final Report.

Conclusion on MJA submission

251. Having reviewed the MJA submission, the Commission does not consider that any changes are required to the CBA. The main point raised by MJA relates to the measurement of the waterbed effect, and in this regard MJA appear to have placed greater emphasis on the integrated nature of Telecom, and propose a lower rate at which mobile termination rate reductions are offset by (relative) increases in other prices. This issue was considered by the Commission during the investigation.

Hausman submission

252. The following paragraph references refer to paragraphs in Professor Hausman's submission to the Minister, on behalf of Telecom.⁴⁹

Paragraph 2

253. Professor Hausman notes that the Commission's Final Report does include the effects of regulation on calling party and subscriber consumer surplus, and yet arrives at an opposite conclusion from his own, namely that regulation increases the long-term benefit of end-users (LTBE). However, the Commission found that inclusion of a 'waterbed effect' of regulation on mobile subscription levels reduces LTBE, although not to the extent estimated by Professor Hausman. Much of his submission disputes parametric assumptions used (discussed below).

Paragraph 3

254. Professor Hausman claims that the Commission has inappropriately included a 'transfer' between producers (ie from mobile operators to fixed operators) as a benefit under the public benefits test (PBT). This amounts to \$13.2 million in 2006 (as can be read from Figure 14 in the Commission's Final Report). Professor Hausman removes this from the PBT results, concluding that there is a net detriment from regulation.

255. However, under the PBT, this figure of \$13.2 million represents a gain in producer surplus resulting from regulation, as it relates to new demand for fixed-to-mobile services (that would not have been present under the counterfactual of no regulation). That is, in terms of Figure 14 of the Commission's Final Report, it is defined over the expansion in demand (Q1-Q0) resulting from lower fixed-to-mobile prices. Compared to the counterfactual, it represents a gain in producer surplus, and is included as a benefit under the PBT (which focuses on changes in total surplus), the results of which are presented in Appendix B..

256. Professor Hausman also makes a claim regarding the loss in producer surplus in the mobile subscription market (last two sentences of paragraph 3). This is discussed below.

Paragraph 8

257. Professor Hausman argues that the inclusion of the \$13.2 million gain in producer surplus (from fixed-to-mobile prices remaining above cost over the period) suggests some sort of inconsistency with the stated purpose of promoting competition to the long-term benefit of end-users. However, the Commission has clearly stated its views that regulation of mobile termination rates would be likely to promote competition for fixed-to-mobile services (for reasons set out in the report), and would lead to a reduction in fixed-to-mobile prices (through cost-based mobile termination rates and increasing rates of fixed-to-mobile pass-through), compared to the counterfactual of

⁴⁹ <http://www.med.govt.nz/pbt/telecom/mobile-investigation/comments/06/06a1.pdf>

no regulation. This promotion of competition may not necessarily lead to prices equalling cost (at least, not immediately), but would be expected to lead to prices moving towards cost over time (relative to the counterfactual). As a consequence, output of fixed-to-mobile minutes expands (relative to the counterfactual), and as long as prices remain above cost (reflecting imperfect but improving competition), there is a gain in producer surplus over this new output.

258. This is consistent, both with the Commission's assessment of competition in the market in which fixed-to-mobile services are supplied, and with the principle of promoting competition for the long-term benefit of end-users.
259. Professor Hausman seems to be suggesting that in order to promote competition, regulation must equate to a situation of perfect competition (ie under the factual, prices equal cost). However, the fact that prices remain above cost for some time is not inconsistent with the proposed regulation promoting competition. This is evident by noting that under the counterfactual, the margin between retail fixed-to-mobile prices and mobile termination rates is significantly higher than under the factual.
260. Alternatively, the Commission could have measured the (potential) benefits, if fixed-to-mobile prices were set at estimated cost of supply, which would have produced a significantly greater reduction in prices, and correspondingly greater increase in surplus. However, the Commission considers a more realistic scenario would be to allow an increasing rate of pass-through of mobile termination rate reductions into retail fixed-to-mobile prices.
261. The inclusion of the \$13.2 million gain in producer surplus is considered appropriate, as it is a gain in surplus resulting from the proposed regulation. The enhanced competition in the supply of fixed-to-mobile services under the regulatory factual leads to a reduction in fixed-to-mobile prices, which expands output. It is this output expansion which leads to the gain in producer surplus (\$13.2 million in 2006).

Paragraph 10

262. Professor Hausman notes that under the consumer welfare test (CWT), the Commission includes a loss in mobile subscriber consumer surplus in 2006, of \$50.2 million. He argues that this \$50.2 million arises from a "decrease in mobile subscriptions" (footnote 6). However, the loss of \$50.2 million arises from the increase in mobile subscription prices and not the reduction in subscription. This can be seen by considering Figure 16 and paragraph 722 in the Final Report. The \$50.2 million in 2006 is the reduction in mobile subscriber consumer surplus, which in turn includes a loss in efficiency (the deadweight triangle, ABC), and a transfer from remaining consumers to mobile operators. This transfer is due to the expected increase in mobile subscription prices, and is only borne by those subscribers that remain connected (but face the higher price). It therefore does not arise from the reduction in subscriptions.
263. Under the PBT, only the deadweight loss triangle is included (Professor Hausman's original submission only measured this loss – see paragraph 571 of Final Report). For example, at paragraph 772, the Commission notes that the \$50.2 million is comprised of an allocative loss of \$0.299 million, and a transfer of \$49.904 million in 2006.

264. The Final Report (which Professor Hausman quotes) states that as long as the transfer is sustainable and not of itself productive of inefficiencies, inclusion of the transfer under the CWT is appropriate. If including a transfer was likely to lead to inefficiencies, for example by deterring efficient investment, then such inclusion may not be appropriate. However, the Commission separately considered the impact of proposed regulation on dynamic efficiency. In addition, the Commission is satisfied that the estimated costs in the Final Report (such as termination costs) are sufficient to recover efficiently incurred costs, and would therefore be unlikely to deter future efficient investment. This indicates that the inclusion of those transfers identified in the Final Report is appropriate under the CWT.

Paragraphs 14 and 15

265. Professor Hausman discusses a number of assumptions used by the Commission in the Final Report:

Elasticities

266. Professor Hausman uses a mobile subscription elasticity of -0.55. However, as noted in the Final Report at paragraphs 613-617, the Commission used an estimate of -0.43 (the paragraph to which Professor Hausman refers (see Final Report paragraph 110) should be -0.43, not -0.55; however, this just reinforces the point made at that paragraph, that mobile subscription is likely to be less elastic than fixed-to-mobile calling). The use of an average elasticity (-0.43) is considered appropriate, as all mobile prices are allowed to increase, not just prepaid prices. Professor Hausman's estimate lies towards the top end of the range of estimates referred to in the Final Report (see paragraph 615).
267. The Commission's Final Report included a sensitivity test of the impact of changes in elasticities on the net benefits. The sensitivity of the results to changes in the mobile subscription elasticity are given at pages 167 (CWT) and 173 (PBT) of Appendix A of the Final Report. The Commission has conducted similar sensitivities as part of this reconsideration, as set out in Appendix C.

Mobile pass-through

268. Professor Hausman argues that the rate at which mobile operators recover lost mobile termination revenues (to the extent that this is akin to an increase in the cost of mobile services) through higher mobile prices will be determined by the level of competition, and would be bounded by 50% for a monopolist (with the upper bound of 100% under full competition). In other words, a single firm monopolist would be expected to pass 50% of any change in costs through into retail prices. The Commission's Final Report recognises this at paragraphs 604 and 605.
269. However, the Final Report noted that the rate of 65% used in an earlier submission by Professor Hausman is unlikely to be appropriate, for reasons set out in paragraph 605 of the Final Report.

270. The Final Report also discussed a number of other likely influences on the extent to which mobile prices would increase, in particular the presence of an integrated fixed/mobile operator. The 50%-100% range referred to above refers to the extent to which changes in costs are passed through into prices. In the case of a pure mobile operator, the regulated reduction in mobile termination rates could be regarded as being an increase in costs, some of which is passed through into higher mobile prices.
271. However, with a fixed/mobile operator, while a reduction in mobile termination rates represents a loss for the mobile operation, it also represents a gain for the fixed operation (i.e. a reduction in costs). As discussed in the Final Report at paragraphs 606-607, the net impact on the overall fixed/mobile operation may be relatively neutral. This could be thought of as no change in the cost line, and hence nothing to pass through (i.e. a 0% pass-through rate). The Commission considered both the level of competition and the likely movement in costs in assessing mobile pass-through. As noted at paragraph 609 in the Final Report, the Commission used a figure of 50%.
272. Further, Professor Hausman argues that despite the likelihood of new entry into the mobile market, the Commission has maintained a constant mobile pass-through rate, rather than allowing it to increase to reflect greater competition. However, should TelstraClear be the new entrant, it could become an integrated fixed/mobile operator. As noted, this structure may dampen the extent to which mobile prices would increase.

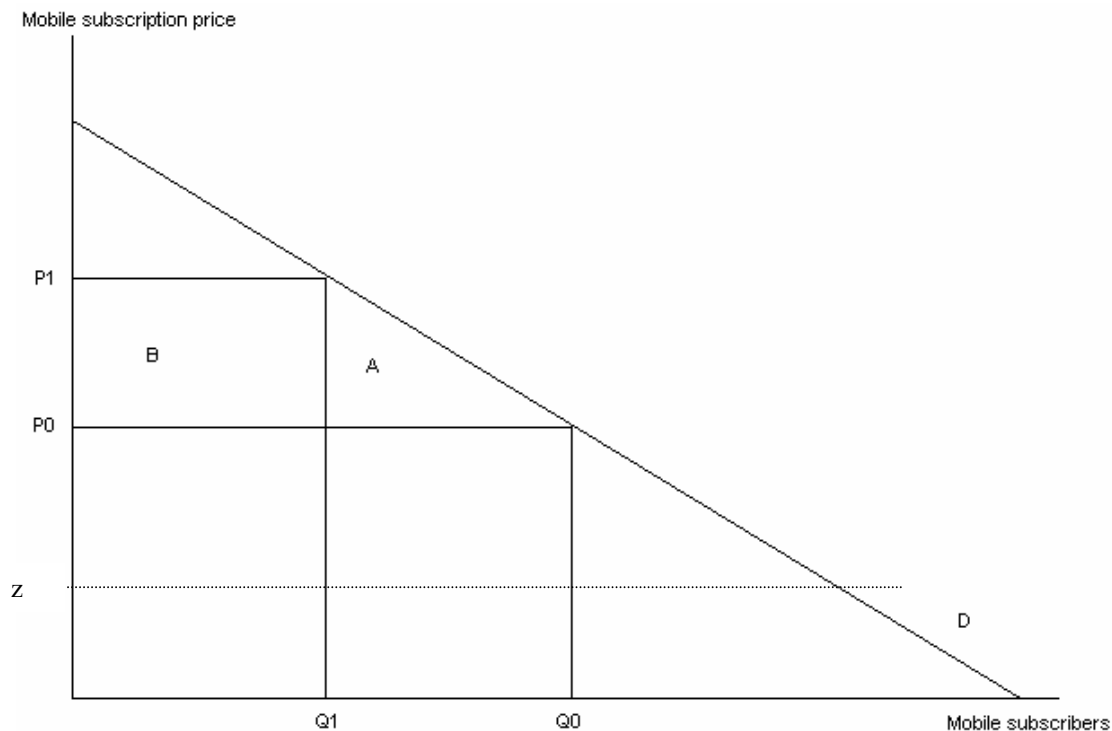
ARPU_s

273. Professor Hausman notes (at paragraph 16) that the Commission used an average ARPU for all mobile subscribers as the starting mobile price, and estimated the % increase in mobile prices (to determine the reduction in mobile subscription levels). The Commission used an average ARPU of \$518.25 (compared to Professor Hausman's initial submission, where he used a Telecom-only figure of \$378).
274. However, Professor Hausman is now arguing for a "pre-paid" ARPU (on the basis that the Commission proxies the marginal subscriber as a pre-paid customer), which is given as \$205 per annum for Telecom and \$330 p.a. for Vodafone. This results in a greater proportional increase in prices, and (along with his subscription price elasticity) produces an estimated reduction in mobile subscription of -116,942 (compared to the Commission's estimate in the Final Report of -35,616).
275. Professor Hausman argues that the "economically rational strategy for Vodafone and Telecom would be to only apply the "waterbed effect" price increase to prepaid customers." However, it is not at all clear why this would be the case. The Commission assumed that the mobile operators would attempt to recover some proportion of the lost mobile termination revenues from all mobile subscribers (as Professor Hausman did in his initial submission); this would lead to an increase in mobile prices on average (not just for prepaid customers), and a loss in mobile subscriber consumer surplus. However, there would be a further loss in fixed-to-mobile and mobile-to-mobile consumer surplus, and this loss is driven only by those that actually drop off the mobile networks, i.e. the marginal customers. In measuring this effect, the Commission took into account the marginal proxy (i.e. prepaid customers), and the fact that prepaid customers tend to receive fewer calls than

average. Hence the Commission made an adjustment to allow for this (discussed in the Final Report paragraphs 583-596).

276. The above can be seen by reference to the following diagram, which shows the demand for mobile subscription services.⁵⁰ The Commission has assumed that a percentage of the lost mobile termination revenues will be recovered by increasing mobile subscription prices. The starting price P_0 is based on the ARPU of Telecom and Vodafone; the estimated increase in mobile prices is added to that, to produce the factual mobile price, P_1 . As a result of this price increase, subscriptions fall (in relative terms) from Q_0 to Q_1 . There is an efficiency loss of area A, and a transfer from the remaining mobile subscribers (not just the remaining prepaid subscribers, as would be implied by Professor Hausman's approach) to the mobile operators. These estimates are referred to in the Final Report as the loss in mobile subscriber consumer surplus resulting from regulation.

Figure 3: Demand for mobile subscription



277. A second step involved the estimation of the loss in fixed-to-mobile and mobile-to-mobile consumer surplus from no longer being able to call the dropped mobile subscribers. These losses depend on the nature of the mobile subscribers that drop off the mobile networks. This is where the Commission used the prepaid subscriber as a proxy for the marginal (dropped) subscribers. Specifically, the question addressed by the Commission is, how much calling party (fixed and mobile) consumer surplus is lost as a result of $(Q_0 - Q_1)$ mobile subscribers dropping off the mobile networks? Among other things, this will depend on the volume of calls that would otherwise have been made to those dropped subscribers (that is, the volume of fixed-to-mobile

⁵⁰ See Figure 9 of the Final Report.

(from fixed callers) and mobile-to-mobile (from mobile callers) calls received by the marginal subscribers).

278. To estimate this, the Commission recognised the fact that prepaid ('marginal') mobile subscribers tend to make and receive fewer calls than on average. As noted above, this was discussed and adjusted for in the Final Report, at paragraphs 583-596.

'Correction' to fixed-to-mobile minutes per prepaid mobile subscriber

279. At footnote 14 of his submission, Professor Hausman makes a 'correction' to the number of fixed-to-mobile minutes received by each prepaid mobile subscriber. According to Professor Hausman, the Commission mistakenly used data supplied by Telecom on the number of fixed-to-mobile minutes per prepaid subscriber:

Telecom reported an average of []TCNZCI PSTN-originated fixed-to-mobile minutes but the CC failed to also make an adjustment for fixed-to-mobile minutes originated on TC's fixed network. Making an estimate for these minutes, based on TC's calling market shares, adjusts the correct amount to []TCNZCI fixed-to-mobile minutes.

280. Having noted this correction, Professor Hausman then goes on to use a figure of []TCNZCI fixed-to-mobile minutes. He notes that this exceeds the Commission's estimate of 107 minutes.
281. On 12 April 2005, the Commission requested information from Telecom (and Vodafone) relating to the number of fixed-to-mobile minutes received by prepaid subscribers. Specifically, the request sought the following information on a quarterly basis:
- a) the total number of minutes of fixed-to-mobile calls received by prepay customers for the quarter; and
 - b) the total number of prepay customers as at the end of the quarter.
282. There was no suggestion that the information being sought only related to fixed-to-mobile minutes which originated on Telecom's fixed network, and there was no indication in Telecom's response that the minutes provided only related to minutes originating on Telecom's fixed network. The Commission understood Telecom's response to relate to fixed-to-mobile minutes received by prepaid mobile subscribers (irrespective of the originating network).
283. However, according to Professor Hausman's submission, the Telecom response only included fixed-to-mobile minutes that originated on Telecom's fixed network. He therefore makes an adjustment to allow for fixed-to-mobile minutes made by TelstraClear fixed customers. If this adjustment is appropriate,⁵¹ this results in a small increase in the number of fixed-to-mobile minutes per prepaid subscriber (from 107 minutes to [] minutes). This adjustment by itself has a very marginal impact on the overall results (for example, in terms of the CBA used in the Final Report, the largest proportionate response is for the constant elasticity demand under the total surplus test, where the net benefit drops from \$37.2 million to \$36.5 million, a reduction of -1.9%).

⁵¹ Which depends on the TCNZ response to the Commission's data request.

Paragraphs 17-19

284. Professor Hausman presents the results of his adjustments to the CBA.⁵²
285. He argues that the PBT results are overstated to the extent that they include a producer-producer transfer of \$13.2 million in 2006. However, as discussed earlier, this amount is a gain in producer surplus that would not be available under the counterfactual, and is hence a gain irrespective of which producer (i.e. fixed vs mobile) ends up receiving it.
286. Professor Hausman goes on to argue that the Commission has missed part of the change in producer surplus under the PBT; in particular, on the mobile subscription side of the market, the increase in price leads to a loss of producer surplus over the contraction in mobile subscription demand. In terms of Figure 3 above, and using Professor Hausman's notation, there is a cost line 'z' which lies somewhere below P₀; as subscription contracts from Q₀ to Q₁, there is a loss in producer surplus across this contraction, equal to $(Q_0 - Q_1) \times (P_0 - z)$.
287. It is correct that the Commission did not estimate this effect in the Final Report, as the Commission did not have the necessary cost information on the mobile subscription side of the market.⁵³ However, the Commission did conduct an internal sensitivity to measure this effect.⁵⁴ This sensitivity involved setting 'z' equal to zero; in other words, the marginal cost of providing mobile services is assumed to be zero. This will overstate the loss in producer surplus (as 'z' will be greater than zero). However, for consistency, the Commission also assumed that the fixed-to-mobile cost was equal to zero (i.e. the cost line in Figure 14 of the Final Report was lowered to zero). This sensitivity led to an increase in net benefits under the PBT.⁵⁵
288. In this reconsideration report, the Commission has included an allowance for this loss in mobile producer surplus. This is discussed in Appendix B of this draft.
289. The remainder of the Professor Hausman submission presents and discusses the results from using the changes he proposes.

⁵² Although the Commission has not attempted to replicate Professor Hausman's "corrected" results, the Commission notes that his results show an identical reduction in mobile subscription (-116,942.50) under both a linear demand assumption and a constant elasticity demand assumption. However, in principle, one would expect different reductions, given the different assumed nature of the demand curve. For example, the Commission's final report estimates reductions of 35,616 subscribers (linear) and 35,632 subscribers (CED). Professor Hausman's result of an identical number under both demand scenarios suggests an error in his calculations.

⁵³ In fact, although the above figure is shown as the demand for mobile subscription, Professor Hausman uses an ARPU which appears to cover a range of mobile services, including subscription and calling. Therefore, the estimation of a single cost line 'z' may be problematic.

⁵⁴ This sensitivity was discussed at footnote 229 of the Commission's final report.

⁵⁵ This can be seen from Figure 16 and Figure 14 in the Final Report. In Figure 16, the loss in producer surplus is the rectangle below points B and C (using the linear demand curve). The relative reduction in mobile subscription in 2006 is estimated to be 35,616 subscribers; this results in a loss in producer surplus of $35,616 \times \$518.30$ for 2006, or \$18.5 million. In terms of Figure 14, which focuses on the benefits from lower fixed-to-mobile prices, the additional increase in producer surplus (from setting $c=0$) is equal to the rectangle below the \$13.186 area; this area is equal to $(1027.6 - 918.2) \text{million} \times \0.2048 , or \$22.4 million. The net effect of this sensitivity for 2006 is therefore an increase in benefits of $\$22.4 - \18.5 million, or \$3.9 million.

Conclusion on Hausman submission

290. Having reviewed the submission by Professor Hausman, the Commission has refined its CBA to allow for a reduction in mobile producer surplus under the public benefit test. This adjustment is discussed in Appendix B. The Commission does not consider that further adjustments to the CBA are necessary.
291. As a general point, it is also worth noting that the Commission's Final Report contained a number of sensitivity tests, including variations in the parameters Professor Hausman mentions. These generally show that the proposed regulation is likely to deliver net benefits under a range of alternative assumptions.

Conclusions and recommendation

Conclusions

Quantitative analysis

292. The CBA used for the purposes of this reconsideration compares a counterfactual scenario based on the commercial offers of Telecom and Vodafone with a factual scenario in which mobile termination rates are regulated. The CBA indicates that although the benefits of regulation are reduced from those estimated in the Final Report, the quantifiable benefits of regulating mobile termination rates in preference to acceptance of the commercial offers are material. Regulation is estimated to produce a net benefit over a five year period of between \$55 million and \$72 million in present value terms, depending on the assumed nature of the demand functions.

Definitional and implementation issues concerning 2G and 3G

293. The Final Report recommended that regulation should apply only to termination of voice calls where the cellular telephone network technology used for that purpose was not third generation or later technology. However, it is difficult to align technology characteristics with the investment incentives the Commission sought to create in attempting to distinguish between different generations of cellular network technology.

Dynamic efficiency

294. The recommendation to distinguish between 3G and non 3G network technology was introduced as a result of the Commission's conclusions that 3G voice termination should not be regulated because of the perceived risk that such regulation would cause a dynamic efficiency detriment. As summarised below, the Commission no longer believes that a material dynamic efficiency detriment exists or that there is any purpose in embedding distinctions in the regulated service based on the generation of cellular network technology used to terminate fixed-to-mobile calls.
295. Given that the 3G networks of Vodafone and Telecom will, by the end of 2005, be able to reach the vast majority of the population, and that the new 3G data services supported by those networks will not be regulated, the Commission considers that the likely dynamic efficiency detriment to investment in 3G services caused by regulating termination rates is small. In addition, the Commission considers that the adverse precedential effect of regulating 3G voice calls is also small, given that regulation is linked to circumstances where clear market power exists and intervention is likely to promote competition for the long-term benefit of end-users. Furthermore, in determining an appropriate regulated rate, the Commission recognises the need for investors to obtain a reasonable return.
296. In the Final Report, the Commission expressed a concern about regulating a risky, new, unproven technology not yet deployed. Since the Final Report, the Commission has had the benefit of studying 3G rollouts in other countries and has also accepted

that both the Vodafone and Telecom 3G networks are in the advanced stages of deployment and operation in New Zealand. The Commission does not therefore consider that 3G is appropriately characterised as a risky, new technology.

297. The estimated benefit of regulating mobile termination rates given by the CBA outweighs any residual dynamic efficiency detriment from regulating 3G voice call termination.

Consideration of commercial offers

298. The counterfactual case based on the commercial offers of Telecom and Vodafone relies on an assumption that the offers will deliver the wholesale and retail price changes promised by the mobile operators. While it is feasible to give effect to the commercial offers through some combination of enforceable contractual undertakings, careful definition of the Telecom pass-through commitment would be required, as would effective monitoring and dispute resolution mechanisms.

Pass-through of end-user benefits

299. A regulated reduction of mobile termination rates is likely to be substantially passed through to retail fixed-to-mobile prices, with the level of pass-through expected to increase over time as competition between fixed operators develops. Nevertheless, to minimise the risk that this does not occur, the service description includes, as an additional matter that must be considered regarding the application of section 18 when making an access determination, any commitment proposed by the access seeker as to how it will use the revenue from reduced mobile termination rates for the promotion of competition for the long-term benefit of end-users.

Recommendation

300. After giving due weight to both its quantitative and qualitative assessments, the Commission recommends that the termination on a cellular telephone network of voice calls originating on a fixed telephone network be made a designated access service by adding the following items to Part 2, Subpart 1 of Schedule 1 to the Act:

Mobile termination service	
Description of service:	Termination (and its associated functions) on a cellular telephone network of voice calls originating on a fixed telephone network.
Conditions:	Nil
Access provider:	A person who operates a cellular telephone network
Access seeker:	A service provider who seeks access to the service
Access principles:	The standard access principles set out in clause 5
Limits on access principles:	The limits set out in clause 6
Initial pricing principle:	Benchmarking against the price of terminating a voice call on a cellular telephone network in comparable countries where the price calculation is based on a forward-looking cost-based pricing method
Final pricing principle:	TSLRIC
Requirement referred to in section 45 for final pricing principle:	Nil
Additional matters that must be considered regarding application of section 18:	The Commission must consider any commitment proposed by the access seeker as to how it will use the benefits from reduced mobile termination rates.

DATED this 22nd day of December 2005



Douglas Webb
Telecommunications Commissioner

Appendix A: Restricted information

Summary of counterfactual mobile termination rates: Commercial offers and Final Report

- A1. Table A1 below summarises the profile of counterfactual mobile termination rates in the commercial offers, and the Final Report. The Commission notes that the commercial offers extend out to 2009/10, whereas as noted earlier, the study period used by the Commission extends to the 2010/11 year. The Commission has assumed that under the respective commercial offers, the average mobile termination rates for 2010/11 would decline in line with the reductions in the previous years.

Table A1: Old and new counterfactual mobile termination rates

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Counterfactual fixed-to-mobile prices

- A2. Table A2 below summarises the counterfactual mobile termination rates and retail fixed-to-mobile prices contained in the Final Report, along with the corresponding rates under the new counterfactual based on the commercial offers.

Table A2: Old and new counterfactuals

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- A3. Table A2 demonstrates that the new counterfactual results in lower fixed-to-mobile prices in comparison with the old counterfactual. By 2009/10, the new counterfactual would lead to an average fixed-to-mobile price of [] cpm, compared to an average of 37.97 cpm under the counterfactual used in the Final Report. The lower fixed-to-mobile price under the new counterfactual has the effect of reducing the estimated consumer surplus available from regulation, though significant benefits persist under regulation.

Summary of Fixed-to-mobile Prices and Quantities

- A4. The fixed-to-mobile prices and quantities under the counterfactual and factual scenarios in this reconsideration are summarised in Table A3 below.

Table A3: Counterfactual and factual fixed-to-mobile prices and quantities

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Net Benefits: Consumer Welfare Test

- A5. The net benefits from regulation under the consumer welfare test are set out in Table A4.

Table A4: Net Benefits (Consumer Welfare Test), \$million

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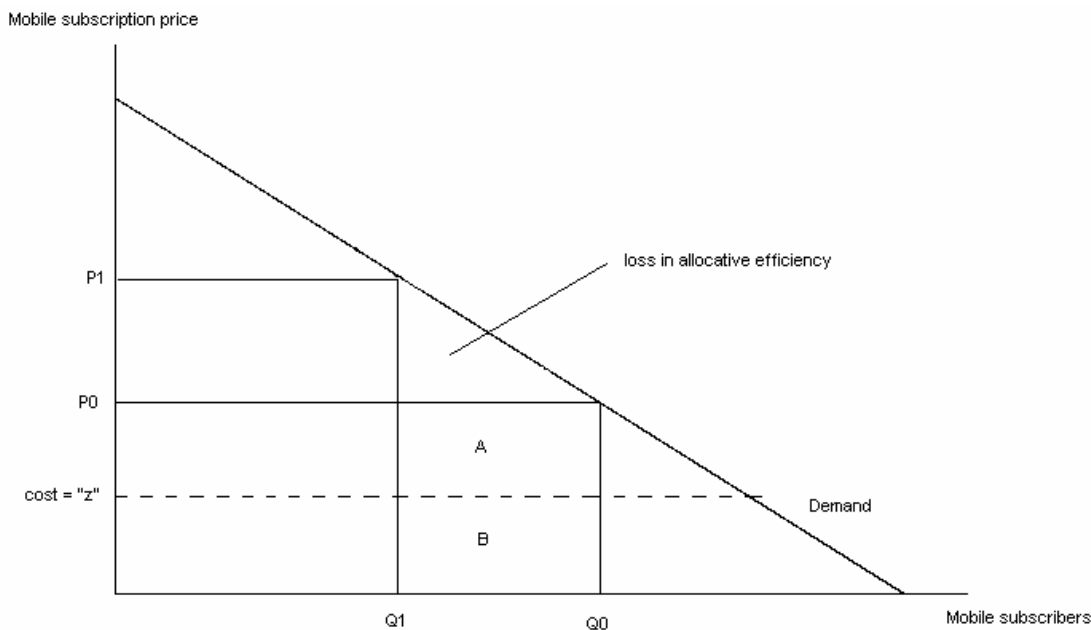
Appendix B: Public benefit test

- B1. This section presents the Commission's assessment of costs and benefits under the public benefit test.
- B2. The model used to measure the net benefits of regulation under the public benefit test is basically the same as the model used in the Final Report. However, one adjustment has been made in terms of the detriments, to allow for a possible loss in mobile producer surplus arising from the 'waterbed effect'. This is discussed below.

Waterbed effect and mobile producer surplus

- B3. In a submission to the Minister on behalf of Telecom, Professor Hausman argues that the Commission's Final Report has missed part of the change in producer surplus under the public benefit test. In particular, on the mobile subscription side of the market, the increase in the mobile subscription price leads to a loss of producer surplus over the contraction in mobile subscription demand. In terms of Figure B1 below, and using Professor Hausman's notation, there is a cost line 'z' that lies somewhere below P_0 ; as subscription contracts from Q_0 to Q_1 , there is a loss in producer surplus across this contraction, of $(Q_0 - Q_1) \times (P_0 - z)$, equal to the area A.

Figure B1: Demand for mobile subscription



- B4. The Commission did not estimate this effect in the Final Report, as obtaining reliable cost information on the mobile subscription side of the market would have been difficult.⁵⁶ However, the Commission did conduct an internal sensitivity to measure

⁵⁶ In fact, although the above figure is shown as the demand for mobile subscription, Professor Hausman uses an ARPU that appears to cover a range of mobile services, including subscription and calling. Therefore, the estimation of a single cost line 'z' may be problematic.

this effect.⁵⁷ This sensitivity involved setting ‘z’ equal to zero, and measuring the loss in mobile producer surplus as areas A and B. This overstated the loss in producer surplus, to the extent that ‘z’ is greater than zero, by the size of the area B. At the same time, the fixed-to-mobile cost used for measuring the benefits of regulation was also set to zero. This overstated the gain in producer surplus from supplying fixed-to-mobile calls. The net effect of this sensitivity test was to increase the net benefits of regulation under the public benefit test.⁵⁸

- B5. A similar sensitivity has been conducted as part of the reconsideration, with the same result, that the net benefits increase under the public benefits test.⁵⁹
- B6. However, the Commission has given further consideration as to how significant this effect (area A) is likely to be. In terms of estimating the gain in total surplus resulting from lower fixed-to-mobile prices (and higher fixed-to-mobile volumes), the Commission has used cost estimates for supplying fixed-to-mobile calls. These costs have been estimated following the approach in the Final Report, where the long-run incremental cost (LRIC) of various components of supplying fixed-to-mobile calls were assessed. These components include call origination on a fixed network, termination of the call on a mobile network, transport costs, and retail costs. Under the factual, these costs now decline gradually over time, as cost-based mobile termination rates are expected to decline.
- B7. In terms of the possible detrimental effects of regulation, the Commission has considered the extent to which mobile prices are likely to exceed long-run costs of providing services to mobile subscribers. As can be seen from Figure B1 above, the closer these costs are to price, the smaller the loss in producer surplus (ie the smaller the area A).
- B8. As noted in the Final Report, there has been little specific information provided to the Commission on the cost of supplying mobile services in New Zealand. However, the Commission found that competition between the mobile operators in New Zealand is unlikely to be sufficiently intense to remove likely excess profits within the mobile industry. Specifically, the Commission concluded that it:⁶⁰

... does not believe that existing or potential competition in {the retail mobile services} market is likely to be sufficiently intense to ensure that excess profits being earned in respect of mobile termination services are dispersed through competition at the retail level.

- B9. For example, in the Final Report, the Commission referred to evidence that prices in New Zealand were relatively high compared to other OECD countries, and that cost

⁵⁷ This sensitivity was discussed at footnote 229 of the Commission’s Final Report.

⁵⁸ This can be seen from Figure 16 and Figure 14 in the Final Report. In Figure 16, the loss in producer surplus is the rectangle below points B and C (using the linear demand curve). In the Final Report, the relative reduction in mobile subscription in 2006 is estimated to be 35,616 subscribers; this results in a loss in producer surplus of 35,616x\$518.30 for 2006, or \$18.5 million. In terms of Figure 14, which focuses on the benefits from lower fixed-to-mobile prices, the additional increase in producer surplus (from setting $c=0$) is equal to the rectangle below the \$13.186 area; this area is equal to $(1027.6-918.2)\text{million}\times\0.2048 , or \$22.4 million. The net effect of this sensitivity for 2006 is therefore an increase in benefits of $\$22.4-\18.5 million, or \$3.9 million.

⁵⁹ The range of net benefits under the Public Benefit test increase from \$1.4m-\$10.4m, to \$42.9m-\$50.0m, under this sensitivity test. There is no change under the Consumer Welfare test, as changes in producer surplus are not measured under that test.

⁶⁰ Final Report, paragraph 243.

differences between New Zealand and other countries are unlikely to explain the relatively high retail prices in New Zealand.⁶¹

- B10. The Commission therefore considers that prices for mobile services may exceed the cost of supplying those services in New Zealand.⁶² An assumption regarding this price-cost margin is therefore required in order to be able to gauge the possible magnitude of the area A in Figure B1.
- B11. An indication of where costs might lie in relation to prices could be taken from the OECD comparison of mobile prices. In its Final Report, the Commission noted that mobile prices in New Zealand exceeded the OECD average in 2004 by between 46% and 78%, across various usage baskets (low, medium, and high usage).⁶³ By February 2005, these margins were between 23% and 72%.⁶⁴
- B12. The Commission has examined the latest OECD pricing data (for August 2005), and this indicates that New Zealand mobile prices are 16% above the OECD average for the low user basket, and around 57%-58% above the OECD average for the medium and high user baskets.
- B13. If the OECD average is taken as a proxy for cost-based prices for mobile services, then these rates can be used to approximate costs as a percentage of prices in New Zealand. For example, for the low user basket, costs would be 100/116, or 86%, of retail prices; while for the medium and high user baskets, costs would be 63%-64%, of retail prices. The average across the three user baskets is approximately 70%.
- B14. The effect of this assumption can be illustrated for the 2006/07 year. In terms of Figure B1, the P_0 line for 2007 is estimated to be \$523, which implies a cost line (at 70% of P_0) of \$366. The estimated contraction in mobile subscribers for 2007 as a result of regulation of mobile termination rates is just over 24,500 subscribers (relative to no regulation). Therefore the loss in mobile producer surplus arising from regulation would be around \$3.9 million (the area "A") in 2007.
- B15. The effect of these assumptions on the total surplus results is summarised in Table B1 below.

⁶¹ For example, see Final Report, paragraph 213.

⁶² It should be noted that Figure B1 above relates to the subscription "side" of the market. Even if subscription prices paid by retail mobile customers are close to subscription costs, the high profits being earned on the termination side of the market would still suggest that overall, the mobile operators would be earning excess profits. Hence, even if $p=c$ in Figure B1 (such that no excess profits were earned on the subscription side of the market), this would be consistent with the concerns the Commission has expressed over the intensity of competition in the retail mobile market.

⁶³ Final Report, paragraph 184.

⁶⁴ Argo Report (appended to Final Report), Table 6.

Table B1: Total surplus results (with $P_0 > c$)

Mobile cost/price ratio	Total Surplus	
	Linear	CED
86% (“low usage”)	\$17.0m	\$7.9m
63% (“med usage”)	\$7.5m	-\$1.5m
64% (“high usage”)	\$7.9m	-\$1.0m
70% (average)	\$10.4m	\$1.4m
100%	\$22.8m	\$13.5m

- B16. With a cost/price ratio of 100%, the total surplus results range from \$13.5 million to \$22.8 million. The mobile subscription detriment being measured - the loss in allocative efficiency – is limited to the triangle in Figure B1 above in this scenario.
- B17. As the mobile cost line is allowed to drop below the mobile price, there is an additional detriment, in the form of a loss of producer surplus (area A). If the cost line is 86% of P_0 , the range of net benefits declines, to \$7.9 million to \$17.0 million. As this percentage falls further, the range of net benefits continues to decline.
- B18. Under this approach, the Commission considers that it may be appropriate to take the average of 70%, in which case the range of results under the Public Benefit test would be \$1.4 million (under a constant elasticity demand curve) to \$10.4 million (linear demand).

Public benefit results

- B19. This section discusses the results of the CBA under a public benefits test. The public benefit test is concerned with changes in total surplus. In this case, transfers of surplus between consumers and producers are generally netted out.
- B20. In terms of the benefits, the reduction in fixed-to-mobile prices leads to an expansion in fixed-to-mobile demand. As noted under the consumer welfare approach, the corresponding expansion in consumer surplus includes a gain in allocative efficiency, and a transfer from suppliers to consumers. Under the public benefits test, only the allocative gain is treated as a benefit.
- B21. In addition, there is a gain in producer surplus across the new fixed-to-mobile demand, to the extent that fixed-to-mobile prices remain above cost over the period. This gain is included as a benefit.
- B22. The detriments measured under the public benefit test include the direct regulatory costs, as well as detriments arising from any increase in retail mobile prices. In the case of the public benefits test, the loss in mobile subscriber consumer surplus (from higher mobile subscription prices) only produces an allocative efficiency loss.⁶⁵ The

⁶⁵ Under the Consumer Welfare test, the mobile subscriber detriment included the entire loss in consumer surplus; however, under the Public Benefits test, the transfer component of this loss is to the benefit of mobile operators, and is therefore netted out from the detriment analysis.

reduction in mobile subscription may also lead to a reduction in producer surplus available to the mobile operators, to the extent that mobile prices are above cost.

- B23. Under the public benefit test, regulation is estimated to produce a net benefit over the period of between \$1.4 million and \$10.4 million in present value terms, depending on the assumed demand functions.
- B24. This is comprised of total benefits from lower fixed-to-mobile prices of between \$40 million and \$50 million; and total detriments (resulting largely from increases in mobile subscription prices) of between \$30 million and \$49 million.
- B25. For the reasons given above under the consumer welfare test, it is appropriate to place greater weight on the linear demand curve results.
- B26. The Commission also notes that there is again a relatively steep increase in the discounted net benefits over the course of the study period, which suggests that there are likely to be additional benefits beyond the term of the study period, that are not included in the quantitative assessment.
- B27. The net benefits from regulation under the public benefits test are set out in detail in Table B2.

Table B2: Net Benefits (Public Benefit Test), \$million

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Appendix C: Sensitivity analysis

Introduction

- C1. This appendix presents the results of a number of sensitivity tests for the quantitative model.
- C2. The baseline results for the consumer welfare approach are \$72.1 million (linear demand) and \$54.8 million (constant elasticity); the baseline results for the public benefits approach are \$10.4 million (linear demand) and \$1.4 million (constant elasticity). These are net present values for the period 2006/07-2010/11, discounted back to the start of the period.
- C3. A number of key parameters are altered in order to determine the impact on the net benefit results. The consumer welfare results are presented first, followed by the results of the public benefits approach.

Consumer welfare net benefits results

Fixed-to-mobile pass-through assumptions

- C4. These assumptions relate to the rate at which changes in mobile termination rates are passed through into retail fixed-to-mobile prices.
- C5. The baseline case is that fixed-to-mobile pass-through increases under the counterfactual from 68% in 2004/05. Telecom has committed to pass-through the entire reduction in mobile termination rates; however, the Commission has assumed a lower rate of pass-through for Telecom's retail competitors, increasing from 68% to 85% over the period. Under the factual, fixed-to-mobile pass-through increases from 68% in 2004/05 to 100% in 2010/11, reflecting further competitive pressures resulting from the proposed regulation.
- C6. The level of benefits resulting from regulation will tend to increase as the pass-through rate under the factual increases (relative to the counterfactual), other things held constant. This is because by increasing the pass-through rate under the factual, any given reduction in mobile termination rates will produce a greater reduction in fixed-to-mobile prices.
- C7. Conversely, a higher pass-through rate under the counterfactual will, all things being equal, reduce the benefits from regulation, as this will tend to diminish the relative fixed-to-mobile price reductions under the regulatory factual.

	Baseline	Alternatives	
		1	2
Counterfactual	68% (2004/05)	68%	68%
	85%/100% (2010/11)	85%/100%	68%/100%
Factual	68% (2004/05)	68%	68%
	100% (2010/11)	68%	100%
NPV linear (\$m)	\$72.1	-\$32.8	\$76.7
NPV CED (\$m)	\$54.8	-\$51.0	\$59.5

- C8. As expected, the first sensitivity, which sets the factual pass-through rate at a relatively low value, reduces the net benefits, while the second sensitivity (with a relative reduction in the counterfactual pass-through rate) leads to a higher net benefit.

Fixed-to-mobile elasticity

- C9. The elasticity of demand for fixed-to-mobile services influences the extent to which fixed-to-mobile demand expands as a result of a reduction in fixed-to-mobile prices. The baseline assumption is a fixed-to-mobile elasticity of -0.6.
- C10. Under the consumer welfare approach, the fixed-to-mobile elasticity is expected to have a relatively small impact on the benefits, as the demand effects tend to be relatively small (compared to the transfer effects). An increase in the fixed-to-mobile elasticity (in absolute terms) will tend to increase the benefits (as demand will expand for any given price reduction).

	Baseline	Alternatives	
		1	2
FTM elasticity	-0.6	-0.7	-0.5
NPV linear (\$m)	\$72.1	\$75.3	\$68.8
NPV CED (\$m)	\$54.8	\$58.9	\$50.7

Mobile termination cost

- C11. The cost of mobile termination forms the basis for a regulated mobile termination rate. The starting baseline estimate is 15 cpm.
- C12. Under the consumer welfare approach, this parameter influences the size of the reduction in fixed-to-mobile prices under the factual, compared to the counterfactual. A lower regulated mobile termination rate will increase the reduction in fixed-to-mobile prices, for any given level of assumed pass-through. This will have the effect of increasing the benefits.
- C13. A lower regulated mobile termination rate will also have an offsetting effect, in terms of raising the detriments associated with the 'waterbed effect'. This is because a lower regulated rate will lead to a greater loss in termination profits, which would

produce a greater increase in mobile prices (holding other parameters constant, such as the level of mobile pass-through).

	Baseline	Alternatives	
		1	2
Mobile termination cost	15 cpm	16 cpm	14 cpm
NPV linear (\$m)	\$72.1	\$53.6	\$91.3
NPV CED (\$m)	\$54.8	\$39.1	\$71.4

Mobile subscription elasticity

- C14. The elasticity of demand for mobile subscription services influences the level of detriments from any given increase in retail mobile prices. The baseline assumption is -0.43.
- C15. An increase in the price sensitivity of mobile subscription demand will lead to a greater detriment, other things held constant. This is because for a higher subscription elasticity (in absolute terms), a given increase in retail mobile prices will lead to a greater reduction in mobile subscription. As a consequence, fixed and mobile subscribers will experience a greater loss of consumer surplus, as they are no longer able to call a larger number of dropped mobile customers.

	Baseline	Alternatives	
		1	2
Mobile customer elasticity	-0.43	-0.55	-0.35
NPV linear (\$m)	\$72.1	\$70.3	\$73.3
NPV CED (\$m)	\$54.8	\$47.8	\$59.5

Fixed-to-mobile minutes per marginal mobile subscriber

- C16. The number of fixed-to-mobile minutes per mobile subscriber is used to estimate the loss in consumer surplus experienced by fixed and mobile callers who are no longer able to contact the dropped mobile subscribers. The baseline assumption is that marginal mobile subscribers receive 35% of the overall average number of fixed-to-mobile minutes per mobile subscriber.
- C17. As this proportion increases, the per-subscriber loss in consumer surplus increases. For any given reduction in aggregate subscription, this will result in a greater level of detriments, and hence a lower level of net benefits.

	Baseline	Alternatives	
		1	2
FTM mins/mobile customer	35%	50%	30%
NPV linear (\$m)	\$72.1	\$69.1	\$73.1
NPV CED (\$m)	\$54.8	\$43.7	\$58.5

Mobile pass-through rate

- C18. The mobile pass-through rate relates to the extent to which any given loss in termination profits resulting from regulation gets translated through into increases in retail mobile prices. The baseline assumption is a 50% pass-through rate.
- C19. An increase in this rate produces a greater waterbed effect, and hence a larger detriment. If this parameter is set to zero, the waterbed effect disappears.

	Baseline	Alternatives	
		1	2
Mobile pass-through	50%	65%	25%
NPV linear (\$m)	\$72.1	\$33.9	\$135.9
NPV CED (\$m)	\$54.8	\$11.1	\$127.9

Discount rate

- C20. The discount rate is used to generate a net present value of benefits and costs arising over the study period. A discount rate of 6% is used in the baseline case.
- C21. A higher discount rate will reduce the NPV.

	Baseline	Alternatives	
		1	2
Discount rate	6%	8%	4%
NPV linear (\$m)	\$72.1	\$67.6	\$77.1
NPV CED (\$m)	\$54.8	\$51.1	\$58.9

Constant elasticity demand price ceiling

- C22. This price ceiling bounds the consumer surplus under the constant elasticity demand curve (which by definition never intersects the price axis). A ceiling of \$3.00 per calling minute is used in the baseline case.
- C23. A lower ceiling will reduce the consumer surplus loss associated with the constant elasticity demand assumption, and hence will increase the net benefits. The linear demand results are unaffected.

	Baseline	Alternatives	
		1	2
Price ceiling	\$3.00	\$4.00	\$2.00
NPV linear (\$m)	\$72.1	\$72.1	\$72.1
NPV CED (\$m)	\$54.8	\$49.1	\$61.8

Public benefits net benefits results

Fixed-to-mobile pass-through assumptions

	Baseline	Alternatives	
		1	2
Counterfactual	68% (2004/05)	68%	68%
	85%/100% (2010/11)	85%/100%	68%/100%
Factual	68% (2004/05)	68%	68%
	100% (2010/11)	68%	100%
NPV linear (\$m)	\$10.4	-\$10.8	\$11.5
NPV CED (\$m)	\$1.4	-\$22.6	\$2.7

Fixed-to-mobile elasticity

C24. The public benefits test results are more sensitive to changes in the fixed-to-mobile elasticity, due to the exclusion of transfers.

	Baseline	Alternatives	
		1	2
FTM elasticity	-0.6	-0.7	-0.5
NPV linear (\$m)	\$10.4	\$17.7	\$3.1
NPV CED (\$m)	\$1.4	\$11.7	-\$8.6

Mobile termination cost

C25. Changes in mobile termination costs have an additional effect under the public benefits test (compared to the consumer welfare effects discussed above). Under the public benefits approach, where only changes in total surplus are relevant, there will be an addition to producer surplus in respect of new fixed-to-mobile demand, to the extent that prices remain above cost. As discussed in the body of this section, the Commission has not assumed that fixed-to-mobile prices fall immediately to the cost of supplying a fixed-to-mobile call. Instead, fixed-to-mobile prices gradually decline over the study period.

C26. A reduction in the estimated cost of terminating calls on a mobile network will tend to increase the level of producer surplus over new demand. This will have the effect of increasing total surplus.

	Baseline	Alternatives	
		1	2
Mobile termination cost	15 cpm	16 cpm	14 cpm
NPV linear (\$m)	\$10.4	\$3.9	\$17.9
NPV CED (\$m)	\$1.4	-\$4.5	\$9.0

Mobile subscription elasticity

	Baseline	Alternatives	
		1	2
Mobile sub elasticity	-0.43	-0.55	-0.35
NPV linear (\$m)	\$10.4	\$4.9	\$14.1
NPV CED (\$m)	\$1.4	-\$9.3	\$8.5

Fixed-to-mobile minutes per marginal mobile subscriber

	Baseline	Alternatives	
		1	2
FTM mins/mob sub	35%	50%	30%
NPV linear (\$m)	\$10.4	\$7.4	\$11.4
NPV CED (\$m)	\$1.4	-\$9.7	\$5.1

Mobile pass-through rate

	Baseline	Alternatives	
		1	2
Mobile pass-through	50%	65%	25%
NPV linear (\$m)	\$10.4	\$4.3	\$20.3
NPV CED (\$m)	\$1.4	-\$10.2	\$20.6

Discount rate

	Baseline	Alternatives	
		1	2
Discount rate	6%	8%	4%
NPV linear (\$m)	\$10.4	\$9.6	\$11.2
NPV CED (\$m)	\$1.4	\$1.0	\$1.8

Constant elasticity demand price ceiling

	Baseline	Alternatives	
		1	2
Price ceiling	\$3.00	\$4.00	\$2.00
NPV linear (\$m)	\$10.4	\$10.4	\$10.4
NPV CED (\$m)	\$1.4	-\$4.3	\$8.3