Response to Comments on the Cost Benefit Analysis

Schedule 3 Investigation into the regulation of mobile termination
Commerce Commission Reconsideration Draft Report
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A report prepared by Marsden Jacob Associates
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1. Introduction and summary

1. Marsden Jacob Associates (**MJA**) has been requested by TelstraClear to provide comments on the submissions provided by Vodafone and Telecom on the Cost Benefit Analysis (**CBA**) conducted by the Commerce Commission (hereafter the '**Commission**') as part of its draft Reconsideration Report on the "Schedule 3 Investigation into the regulation of mobile termination".

2. The comments and opinions expressed in this paper are those of MJA and do not necessarily reflect those of TelstraClear. This report contains restricted information enclosed in square brackets.

3. On 9 June 2005, the Commission publicly released the final report of its "Schedule 3 Investigation into Regulation of Mobile Termination". In that Investigation, the Commission recommended designation of 2G voice calls to a cellular telephone network that originate on a fixed telephone network. Following this final report Telecom and Vodafone made commercial offers to the Minister offering voluntary reductions in mobile termination rates over time. Telecom also offered to pass-through 100% of the reductions in termination to retail fixed-to–mobile (**FTM**) prices. Following a reconsideration of the issue the Commission published a Reconsideration Report (22 December 2005). In this report the Commission continued to recommend designation of 2G voice calls to a cellular telephone network that originate on a fixed telephone network but also recommended designation of 3G voice call termination.

4. The Commission's recommendation centres on a CBA and on the Commission's own evaluation of that CBA. The CBA is an assessment of a counterfactual scenario ("the future without designation" – in this case one with voluntary industry agreements) with a factual scenario ("the future with designation"). Broadly, the Commission considers different efficiency measures under each of these scenarios and measures the net benefit of designation. Compared with the final report, the Commission has, in its reconsideration, made changes to a number of assumptions, including those related to FTM pass-through, counterfactual scenarios and changes in cost over time.

5. Vodafone and Telecom have both responded in detail to these changes in their submissions to the Commission's report. In our opinion, the key issues raised are:

- Vodafone and Telecom consider that the Commission's application of the waterbed effect is erroneous;
- Vodafone and Telecom consider that incorrect assumptions are used for FTM pass-through;
- Vodafone (based on work by its consultant Covec) considers that indirect costs should have been included;
- Covec considers additional detriments should be added to the Commission's CBA; and
- Telecom and Vodafone argue that the Commission's assumption regarding a reduction in the factual Mobile Termination Rate (**MTR**) from 15cpm down to 12cpm is incorrect.

6. After careful consideration of these issues our summary position on these issues is:

- *Waterbed effect*. None of the arguments provided by Vodafone (and Covec) and Telecom give us reason to revise our position on the extent of the waterbed effect. In our view, the Commission assumption of a "50%" waterbed likely results in an overstatement of detriments. As we have stated in previous reports to the Commission, any justification of a waterbed hinges critically on the reactions of Telecom because of its integrated nature. While we are not able to quantify the exact extent of the waterbed effect, we do not believe this effect could reasonably be quantified to be more than 25%. Indeed, we are not convinced that a waterbed effect would even be material in New Zealand and it may even be appropriate to exclude it altogether.
- *FTM pass-through*. Both incumbents and Covec argue that both counterfactual and factual FTM pass-through rates are inappropriate. In terms of the counterfactual pass-through by competitors there is agreement between Telecom, Vodafone and Covec that any rate less than that committed by Telecom is inappropriate. Although theoretical arguments can be presented that would suggest that competitors would pass-through at the same rate as Telecom, these are far from conclusive and should be evaluated with care. In our opinion, no evidence or arguments have been presented that demonstrate that there should be a material change to the Commission's assumptions.
- *Additional detriments*. Covec suggests that several additional detriments need to be added to the Commission's analysis. In our opinion, only one of the proposed detriments is reasonable to include: producer detriments in the FTM market. Where it is accepted that there is a waterbed effect

and that this leads to lower mobile subscriptions, we accept that this will impact on both consumer surplus and producer surplus.

- *Indirect costs*. Covec argues that some account must be taken of indirect costs because of the uncertainties in the MTR estimate and suggest 10% of estimated benefits is reasonable. Covec offers no evidence to suggest that 10% is appropriate. In our view, account of indirect costs in the current CBA framework is wholly inappropriate. Uncertainty is dealt with in the Commission's CBA by selecting the 75th percentile of the MTR benchmark estimate (in fact, the Commission has chosen a rate above the 75th percentile). Inclusion of indirect analysis was originally related to the fact that the Commission had elected to do a partial CBA and hence used indirect costs as a means to discount the identified net benefits. The Commission's CBA now models directly (through the waterbed effect) detriments related to a reduction in the MTR. In our view, the Covec argument that inclusion of 3G should somehow result in indirect costs is clearly unfounded.
- *Reduction in MTR*. Telecom presents several arguments against the reduction of the MTR from 15 cpm to 12 cpm in 2010/11. In our view, none of these arguments should result in any changes to the Commission's assumption. It is clear that the MTR will decrease looking forward. This is demonstrated by the Commission's analysis even where some corrections are made based on Telecom's comments. Covec and Vodafone raise the issue that there is an ongoing migration in the period of the Commission's investigation and that this migration will affect the MTR. In our view, these issues are irrelevant to the extent the Commission has specified the benchmark for mobile termination costs on the basis of TSLRIC. Although traffic over time will migrate from Vodafone's 2G network to its 3G network, this is irrelevant for the efficient forward-looking cost standard TSLRIC. TSLRIC is the cost of building a network today looking forward using best in use technology. Hence, even if half of Vodafone's subscribers were using 3G technology and the other half 2G, the choice to be made within the TSLRIC standard is to build a network that could efficiently cater for that traffic. That could be 2G, 3G or even a hybrid solution, but would not include any migration costs.

7. All in all, our review of submissions by Telecom, Vodafone and Covec only leads us to recommend one minor change to the Commission's CBA in its current form. Using the Commission's original model and adjusting for the producer detriment to mobile subscriptions calculated by the Covec model[1] a

[1] The Commission's assumptions were input into the Covec model including the implied revenue recovery for the Commission's subscription rates.

small reduction is obtained to the total surplus estimate. In both the linear and CED models, the net benefit is still positive, albeit significantly reduced in the last case. The table below compares the estimates.

TABLE 1: COMPARISON

	Commission	*Covec*	*Amended*
Consumer Welfare – Linear	$72.1m	–$115.4m	$72.1m
– CED	$54.8m	–$149.6m	$54.8m
Total Surplus – Linear	$10.4m	–$105.5m	$9.1m
– CED	$1.4m	–$131.6m	$0.1m

8. The results in the table show that there is still substantial net benefit of designation. Hence this lends continued support for the Commission's conclusion that designating mobile termination will create substantial net benefits for end-users in New Zealand. Indeed, we believe the Commission has been too conservative in its assumptions and hence that the case for designation of mobile termination is stronger than currently indicated by the Commission's analysis.

9. In the following we consider each of the reports provided by Vodafone and Telecom in turn.

2. Telecom submission

10. Telecom submits that the Commission's CBA is not credible, and does not meet the standard of evidence based analysis that is needed to support a recommendation of regulation. It raises the following concerns:

- Introduction of a glidepath in the factual termination rate;
- Inaccurate modelling of pass-through in the counter-factual and factual; and
- Incorrect application of Professor Hausman's CBA method and modelling of the waterbed effect.

11. We discuss the Telecom submission on each of these points in the following sections.

2.1. Glidepath

12. Because of uncertainty, Telecom considers that it would be prudent for the Commission to model a regulated rate of 15 cpm throughout the study period of the CBA, rather than the glide-path to 12 cpm by 2010/11. Telecom's arguments are as follows:

- First, Telecom argues 12 cpm in 2010/11 is derived from a starting point that is just an estimate – the Commission has estimated that mobile termination currently costs 15 cpm. A TSLRIC-based costing exercise may well yield a different figure from the 15 cpm estimated by the Commission.

  While we do not disagree that a costing exercise may yield a different estimate than that estimated by the Commission using benchmarking, the Commission is entitled to use benchmarking in order to estimate what benefits there may be in regulating MTRs. This is especially the case given that benchmarking is proposed as the initial pricing principle. Further, experience suggests that unit costs of mobile termination will decrease over time. It is therefore wholly appropriate for the Commission to assume a decline in the MTR over time.

- Second, Telecom argues that the Commission has derived an MTR of 12 cpm by quoting some highly questionable "supporting" calculations that intend to demonstrate that the unit costs of capital of investment in mobile networks in New Zealand is estimated to decline.

  We agree with Telecom that there are specific features of the Commission's calculations that are questionable. In particular, we agree

that users with two mobile phones are unlikely to double their consumption. However, a more important question is whether the aggregate future trend in the growth in mobile minute usage per subscriber is reasonable. Based on existing and forecast usage figures from other jurisdictions we suggest that the Commission's figures are reasonable and even slightly conservative.

All three methods indicate that unit costs will decline. The key issue is therefore whether a 3 cpm decline is a reasonable estimate. Any forecast is uncertain, however, it would clearly be a mistake to assume a zero decline as suggested by Telecom. In our view, the evidence presented by the Commission can comfortably be used as a basis for a 3 cpm decline.

- Thirdly, Telecom states that the Draft Reconsideration Report hypothesises that mobile equipment costs will decline over time and economies of scope will be realised by mobile firms as customers demand a wider range of services. According to Telecom it is not at all clear that either of these two factors will be significant enough to contribute to a drop in the cost of mobile termination.

  As an example that equipment costs may rise, Telecom includes cost of handsets in the discussion. The cost of mobile termination should not include the cost of handsets. These costs should be allocated to the subscription event and not termination. Hence the handset cost example is inappropriate. Telecom also attempts to discredit the general proposition that increases in the number of services that use the network will result in a reduction of the unit costs of termination. It states that "*for this principle to hold true, the additional revenue generated by new services must exceed the additional costs of network investment. In the case of new mobile services, it is not clear that the demand for new mobile products (and consequent) revenue will exceed the additional costs of network investment in the next five years.*"[2] If the revenue cannot be recovered even in the long run then we agree that it does not make economic sense to introduce new services. However, it is commonly acknowledged that the majority of costs in the telecommunications industries are fixed (and the mobile sector is no exception). When this is the case, providing additional services will *ceteris paribus* reduce unit costs. That Telecom should be suggesting something else is surprising and simply wrong.

  Telecom also attempts to cloud the discussion by commenting on the allocation of common costs. They raise the argument that a large proportion of the common costs of the mobile network should be

[2] Telecom submission p.19-20.

allocated to mobile voice termination because the demand for voice termination services is likely to be relatively inelastic and that would significantly reduce the economies of scope realised as further services are added to the network. The argument raises two points: is allocation of a larger proportion of common costs to termination reasonable and how large are common costs as a proportion of total costs? In relation to the first issue we will not discuss the issue in detail here, but note that no regulator to our knowledge has applied a Ramsey pricing framework for mobile termination. Regarding the second point we note that international experience in the application of the TSLRIC principle shows that the extent of common costs is relatively limited. We suggest that the extent of network common costs is around 5% of total annual MT service costs. This figure is in line with the proportion of common costs in the Swedish bottom-up model[3] and that suggested in the UK[4]. In addition to network common costs are non-network common costs. Based on our examination of the updated UK LRIC model and the Swedish model we estimate that these may be between 0 - 10% of total annual costs. Hence we suggest that common costs represent between 5% and 15% (or 10% on average) of the total network and non-network costs within an efficient forward-looking economic cost concept such as TSLRIC for a mobile operator. The relatively minor size of these common costs therefore lends little support to comments provided by Telecom.

13. To summarise, we do not believe Telecom has raised any major problems with the Commission's analysis.

2.2. Pass-through

14. Telecom disputes the Commission assumption in the counterfactual scenario, that FTM competitors would not match Telecom's commitment to pass-through 100% of the decline in commercially-agreed mobile termination rates to FTM customers.

15. Telecom considers that there are strong reasons for assuming that competitors will match its pass-through rate in the market. In particular, Telecom is critical of the Commission comment that FTM competitors may be under less pressure to match drops in FTM rates by Telecom in the market because, on average, competitors charge less than Telecom.

[3] For more information on the approach to common costs in the Swedish bottom-up model, please refer to http://www.pts.se/Archive/Documents/SE/Final%20position%20on%20common%20costs_130204.pdf

[4] According to Oftel, the magnitude of network common costs is small 3-5%

16. We refer to discussion in section 3.1.6 and 3.1.7.

2.3. Waterbed and Hausman

17. Telecom disagrees with the Commission's proposed waterbed effect of 50%. Professor Hausman has submitted, this is the most extreme assumption the Commission could make, as it only holds true in situations of pure monopoly.

18. The waterbed effect is a way of accounting for any detriments that arise from the designation of mobile termination, i.e. the impact on mobile retail prices of reductions in mobile termination rates. In other words, if mobile termination rates are pushed down, prices are pushed up somewhere else in the pallet of services offered by the operator to compensate for losses. The size of the waterbed effect indicates the extent to which this occurs.

19. In our view, Telecom has not provided any new information that has not already been considered by the Commission.

20. As we have stated previously the waterbed effect may operate under a wide range of different competitive and non-competitive scenarios for the retail market. There are two extremes:

- A monopoly on retail (and wholesale) mobile services: With a monopolised market and no restraints on the monopoly provider, any mandated decrease in mobile termination may be off-set by an increase in retail service costs. Hence re-balancing occurs because the monopoly provider exploits his/her monopoly power.
- Full competition for retail mobile services: With full competition in the retail market, operators may be assumed to be operating under a zero economic profit constraint. Any reduction in the mobile termination rate would therefore imply that mobile operators would not recover their costs (or the rate of return would fall below that of the cost of capital). Hence operators would seek other means to bring themselves into balance by increasing revenues from other sources, for example, mobile subscription fees.[5]

21. The dynamics of re-balancing are substantially different in the two extreme cases. In the case of a monopoly, the operator will re-balance because it is able to, hence ensuring its excessive profits are maintained, while in the case

[5] Note that even in a fully competitive industry the waterbed effect would require entry and exit of firms so that the required price changes become equilibrium values. Similar problems would arise in contestable market with a small number of firms, where price changes would either lead to long-term profits or losses or large entry or exit. Thus, even if mobile markets are close to contestable there is unlikely to be a full waterbed effect. None of these considerations are made within the theoretical submissions of Hausman.

of a full competition scenario re-balancing occurs out of necessity to ensure cost recovery.

22. Between these two extremes we find the workings of the New Zealand market which are also complicated by the integrated nature of Telecom. Mobile competition in New Zealand is not perfect nor is it homogeneous Bertrand competition or even a monopoly. Rather, it is some sort of differentiated duopoly with some capacity constraints and complicated by Telecom's presence in the fixed network market. In particular, the commercial outcome for fixed line operators and mobile operators is substantially different when MTRs are reduced. For an integrated operator like Telecom their reaction will depend critically on the balance between likely losses for its mobile operations and gains to its fixed network operations.[6] We have discussed this issue in more detail in previous submissions to the Commission.

23. Telecom makes no attempt to consider the workings of the New Zealand market, but simply refers to theoretical propositions of Hausman. We contend that Telecom's comments and reference to Hausman are not helpful. While it is clear that some potential waterbed effect has to be considered, given the demand interactions between mobile services, the arguments and evidence presented by Hausman and Telecom should not give rise to revision of the Commission's assumption.

[6] For a discussion of this issue, we refer to Section 2 of our submission MJA (2005) *Comments on the Cost Benefit Analysis*, Schedule 3 Investigation in the regulation of mobile termination Commerce Commission Final Report 9 June 2005.

3. Vodafone submission

24. Vodafone has provided a number of submissions on the Reconsideration Report. In terms of the CBA, Vodafone has commissioned Covec to review the analysis. Since Vodafone's commentary to a large extent is based on the findings in the Covec report, we begin by reviewing the comments by Covec.

3.1. Covec submission

25. Covec draw the following conclusions:

- The CBA significantly underestimates the size of the waterbed effect;
- The 'FTM effect' is assumed to be implausibly strong and further contributes to the underestimate of the size of the waterbed effect;
- The Commission's methodology of estimating mobile market 'marginal cost' per mobile subscriber is flawed and results in an underestimate of the producer detriments in the mobile market;
- The waterbed calculations omit producer detriments in the FTM market, which results in an underestimate of the waterbed detriments under the total surplus test;
- The waterbed calculations also omit detriments arising from increased mobile origination prices that reduce the volume of mobile-originated calls by inframarginal customers;
- The Commission is incorrect in its assumption that Telecom's competitors in the FTM market will not match its 100% pass-through commitment under the commercial counterfactual;
- The Commission overestimates the increase in FTM pass-through that will result from regulation;
- An estimate of the indirect costs of regulation, for example caused by setting the regulated MTR at the wrong level, have been omitted from the Commission's model; and
- The Commission is incorrect to assume that per-unit costs will immediately fall as a result of the transition from 2G to 3G mobile technology.

26. We discuss each of these findings in the following sections.

3.1.1. Waterbed effect is underestimated.

27. Without endorsing the use of the Commission's pass-through assumption of 50%, we agree with the effect of the Commission in applying the pass-through rate to 'price' and not 'revenue'. In its assessment of the waterbed effect in its Final Report (June 2005, p. 120)[7], the Commission stated that Professor Hausman overstated the mobile pass-through when using the 65% pass-through used for the MTR and that 50% would be used. The 65% here refers to the change in price, not to any change in revenue. Therefore in its analysis of waterbed, the Commission applied the 50% pass-through to the 'price' not the revenue.

28. If the Commission considers that pass-through should be reflected in revenues, then it should set the price change such that quantities demanded meet the targeted revenue change.

29. For additional commentary on the waterbed effect see section 2.3.

3.1.2. The 'FTM effect' is too strong

30. Not only do FTM callers benefit from the reduced FTM charges but also the mobile subscribers, who receive more calls per subscriber. While one can argue about the extent of benefits to individuals receiving calls, there can be no doubt that receiving parties are net beneficiaries and this is expressed in their willingness-to-pay for subscriptions. Hence, an increase in FTM calls should result in an outward shift of demand for mobile subscriptions. The empirical extent of this effect is difficult to estimate, because cross elasticity estimates of the demand for mobile subscription with respect to the price of FTM calls are uncertain.

31. The figures used by the Commission were discussed in the final report and derive from Professor Hausman's analysis. Under linear demand Hausman, estimates a reduction in subscription loss from increased subscription fees by about 15%.

32. While any estimates of the FTM-effect will be uncertain there is a need to address the effect. It would be inappropriate, as argued by Covec, to exclude the effect all together. Covec also argues that there is an inconsistency between the Commission's justification for regulation and the observation that mobile subscribers do not care about the cost of FTM calls. In our view, whether or not mobile subscribers care or not about the cost of FTM calls made to them is irrelevant for the current discussion.

[7] The Draft Reconsideration Report is silent on this matter.

3.1.3. Estimate of mobile market 'marginal cost' per mobile subscriber

33. Covec contends that the Commission's approach to estimation of the (marginal) cost of a subscriber is flawed. While we believe there are elements of the Commission's analysis that are subject to critique, we do not find the Covec conclusion offers much help in this respect.

34. Covec simply adopted a cost estimate between $100-200 per mobile subscriber with no empirical support or consideration of the other inputs in the model. We agree that a marginal cost concept is an appropriate yardstick, however, Covec fail to acknowledge that there needs to be consistency in the analysis. As Covec note:[8]

> *The reduction is producer surplus as a result effect is therefore the reduction in revenues associated with marginal subscribers, minus any cost savings that the mobile operator is able to achieve as a result. [emphasis added]*

35. The revenues which are used in the Commission analysis are average revenue – not marginal revenue. Hence use of the Covec assumptions is inappropriate and will overestimate the producer detriments.

3.1.4. Omission of producer detriments in the FTM market

36. Where it is accepted that there is a waterbed effect and that this leads to lower mobile subscriptions, we accept that this will impact on both consumer surplus and producer surplus.

37. Covec calculates the producer surplus as the product of the loss of subscribers under the factual and the producer surplus per mobile subscriber. Mobile producer surplus is product of the number of minutes for a marginal subscriber and the margin of the counterfactual price over the cost of FTM.

38. We consider the quantum of this estimate will be lower reflecting the more conservative and appropriate assumptions of the Commission with regard particularly to the waterbed effect and for FTM pass-through. The combined effect reduces the detriment from around **[ ] VNZRI** to $1.2m.

3.1.5. Omission of detriments arising from increased mobile origination prices

39. This element comprises the most significant 'offset' to total surplus (when assumptions are held constant). Its dominant component is the loss of

[8] Covec submission p. 14.

producer surplus due to higher mobile origination charges. The estimate of lost producer surplus multiplies the average usage figure per subscriber by the number of subscribers under the factual and the difference between the counterfactual price and the marginal cost. This difference uses the same mark-up as used for mobile subscription. Again this figure reflects the extent of the waterbed effect.

40. It is not clear where the increase in origination charges comes from. The analysis assumes that origination charges increase at the same rate as subscription charges. In estimating the waterbed effect, the recovery of revenues is obtained through higher subscription charges alone. If originating charges also increase (by the same percentage as subscriptions) this has a strongly positive effect on the mobile carriers' bottom line. In 2006, subscriptions recover **[ ] VNZRI** of 'lost' revenue of **[ ] VNZRI**. Increasing charges by the same percentage as per subscriptions nets the mobile carriers another **[ ] VNZRI** ('lost' producer surplus in allocative terms is around **[ ] VNZRI**). It suggests that if the mobile carriers can somehow signal their intent to raise prices by the same amount, they could all achieve a significant windfall.

41. As the justification for this increase is not clear, we suggest that it should be omitted from the analysis or some balance between the use of subscription and call charge revenue be used.

42. The minor component of mobile loss: lost consumer surplus appears to be internally consistent. It, however, suffers from the same issue as producer surplus, in that it derives from higher originating charges.

3.1.6. Matching of 100% pass-through commitment

43. In terms of FTM pass-through in the counterfactual scenario, Covec argues that the Commission's assumption that it will be less for competitors to Telecom is flawed. Covec offers a theoretical argument and one based on historical pass-through.

44. In terms of the historical pass-through levels, we agree that these indicate competitors offering a larger pass-through than Telecom. However, it is unclear whether these observations may be applied looking forward. In particular because the current situation is substantially different to that that may be observed historically.

45. The theoretical discussion relies on the notion of asymmetric competition which according to Covec arises because Telecom has higher average prices than its competitors, yet a greater market share. Covec conjectures that this

is due to Telecom enjoying the benefits of brand loyalty, switching costs, 'onebill' effect, or some combination of these.

46. We agree with Covec (within their set-up) that in equilibrium 'marginal' consumers will be just indifferent between using Telecom or one of its competitors and that the net benefits of using Telecom will equal the net benefits of using the competitor for those customers, taking into account the asymmetry in the gross benefits of belonging to Telecom. And it therefore follows that a price reduction without similar reaction from competitors will encourage customers to switch to Telecom. However, this theoretical discussion leaves a number of questions unanswered. First, is it reasonable to assume that the gross benefits belonging to Telecom are adequately reflected in the price differences? Second, is it reasonable to assume that competitors will react only by changes in price? Third, is it reasonable to assume that competitors to Telecom are a homogenous fringe with 'marginal' users reacting in similar manner? Fourth, how does Covec explain that competitors historically have passed-on a greater share than Telecom within their theoretical framework?

47. The answers to these questions lie in a more detailed modelling of the market for which Covec has not attempted. Clearly, competitors will need to react to changes in Telecom prices, but we do not believe that this need be 100% in the short or short-to-medium term. Hence we believe that the Commission's assumption that competitors to Telecom will pass-through slightly less than 100% is reasonable within the timeframe considered.

3.1.7. Overestimate of increase in FTM pass-through

48. The Commission's assumptions on pass-through assume a significant increase in competition in FTM rates. In our 2004 submission, we noted that historical pass-through averaged 65% but that with the threat of regulation the rate appears to be increasing. We concur that under regulation, pass-through is likely to increase significantly.

3.1.8. Estimate of the indirect costs of regulation

49. Covec argues that the Commission's decision to regulate 3G termination makes it more important that indirect costs are included in the CBA. It argues (p. 21):

> *As relatively little is known at this stage about 3G costs and demand, the probability of regulating at the 'wrong' price is relatively high, and the negative effects of doing so are potentially large. In our*

> *opinion it is simply too risky to recommend regulation of 3G termination without an allowance for indirect cost. [emphasis added]*

50. Hence the possibility of adverse effects from the MTR being set at the wrong level is used as an excuse to advocate for indirect costs. Covec seems to forget that the Commission already conservatively has chosen to use the 75th percentile as a starting point for their termination cost estimate. In fact, the 15 cpm estimate is above the 75th percentile benchmarked cost estimate. It is therefore, in our opinion, wholly inappropriate to include any allowance for indirect costs. And even if there was, no justification is provided for the 10% suggested by Covec, which simply seems to be an arbitrary chosen number.

3.1.9. Fall in per-unit costs

51. Covec argues that migration from 2G to 3G has an impact on the unit cost of mobile termination. In particular because 2G and 3G technologies will operate in tandem, in operation the blended unit of cost of termination is likely to exceed that assumed by the Commission.

52. More generally we note that that migration from 2G to 3G might give higher costs because of:

- duplication of equipment, staff and operations; and
- the inability to exploit any economies of scale.

53. However, since migration typically occurs to achieve cost efficiencies and the ability to offer additional services (economies of scope) which is reflected in the average cost curve for 3G lying below that of 2G, it is not clear that a blended cost would in fact rise. The specific characteristics of the cost curves and point on the migration path will determine the blended cost.

54. However, these issues are irrelevant to the extent the Commission has specified the benchmark for mobile termination costs on the basis of TSLRIC.

55. While traffic will migrate from Vodafone's 2G network to its 3G network, this is, irrelevant for the efficient forward-looking cost standard TSLRIC. TSLRIC is the cost of building a network today looking forward using best in use technology. Hence, even if half of Vodafone's subscribers were using 3G technology and the other half 2G, the choice to be made within the TSLRIC standard is to build a network that could efficiently cater for that traffic. That could be 2G, 3G or even a hybrid solution, but would not include any migration costs.

56. Further, practical cost modelling of the MTAS in other jurisdictions suggests that costs of 3G migration should not be taken into account. In Sweden, for example, certain "3G sensitivities" were considered, but in the final pricing document the regulator, Post och Telestyrelsen, determined that migration should not be included in the cost model, i.e. the input parameters are calibrated as if all traffic is carried on 2G looking forward.[9]

3.1.10. Conclusion

57. Almost all of the difference between the consumer surplus estimates of Covec and the Commission are explained by changes in assumptions (including here the difference between 50% unit price and 50% revenue recovery). However, Covec identifies a number of extra detriments and these reduce the net benefit under a consumer surplus approach and result in a net negative benefit under a total surplus approach. We disagree with the addition of indirect costs and the inclusion of a waterbed effect for mobile origination charges. The inclusion of the (minor) effect of producer FTM detriments does not, of itself, change the core conclusion from the Commission's modelling that there is a net benefit from designation. Further, in this instance, the Commission is relying on the Consumer Benefit results due to the test set out in the Telecommunications Act 2001.

58. Further, it is clear that Covec has focused on improving the Commission's analysis of detriments and no consideration has been given to modelling any offsetting effects. For example, the inward shift of the demand for FTM calls caused by reductions in mobile subscribers is on average associated with a corresponding outward shift of the demand for fixed-to-fixed (**FTF**) calls to that subscriber and results in a consumer surplus gain for FTF callers.

3.2. Main submission

59. Vodafone has supplied a main submission and supporting submissions (report and excel models) from its consultant Covec on the CBA. In its main submission Vodafone raise the following concerns:

- The negative effects of the waterbed effect are far too low;
- The Commission is inconsistent in its fixed to mobile pass-through assumptions and too optimistic about pass-through of lower termination charges under regulation; and

[9] The Swedish model therefore implicitly includes forecast 3G traffic as 2G traffic. For more information refer to Bilaga 2 (Swedish) in: http://www.pts.se/Archive/Documents/SE/Prismetod_mobil_%20LRIC_EXTERN_4maj2004.pdf

- An allowance must be made for the risk of being wrong on its estimated rates.

3.2.1. Waterbed effect is underestimated

60. Vodafone argues that the Commission's has understated the negative effects of regulating mobile termination rates. It has failed to calculate the waterbed correctly or it is using overly conservative assumptions for mobile pass-through.

61. For a discussion of this issue see sections 2.3 and 3.1.1.

3.2.2. FTM pass-through is inconsistent and too optimistic

62. Vodafone argues that fixed line phone companies, such as Telecom, will not pass on the benefits of lower termination charges to fixed-line customers unless competition or the Commission requires them to and there must be rigorously enforced pass-through if consumers are to get any real benefits from lower termination charges. For discussion of issues related to pass-through we refer to section 3.1.7.

3.2.3. Allowance for mistakes

63. Vodafone argues that the Commission must make an allowance for the risk of being wrong on its estimated rates, in particular because it is proposing to regulate termination charges on Vodafone's new 3G network. Hence the Commission must build in a margin for error. This is essentially the same argument presented by Covec and their reason for suggesting inclusion of indirect costs. For discussion of this issue see section 3.1.8.