

**Short Report on the
Assessment of the Expected Costs and Benefits of
Lower Mobile Termination Rates in New Zealand**

by

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Introduction

1. I have been asked by 2degrees to critically evaluate and comment on the reports submitted by Concept Economics and Covec following the Commerce Commission's draft report on whether the mobile termination access services should become designated or specified services. The following comments are in response to this request.
2. In more detail, my comments will concentrate on three areas in the following order:
 - the likely effects of mobile termination regulation on competition,
 - the cost-benefit-analysis of mobile termination regulation conducted by Concept Economics,
 - the cost-benefit-analysis of mobile termination regulation conducted by Covec.

A combination of mobile on-net discounts and high mobile termination rates can serve as a strategic barrier to entry

3. In the economics literature it is well accepted that a combination of high mobile termination rates and on-net discounts can serve as a strategic barrier to entry to retail markets in mobile telephony.¹ The European Commission considers that "higher mobile termination rates make it harder for fixed and small mobile operators to compete with large mobile operators."² Similar statements can be found by the European Regulators Group (ERG), as the Commerce Commission noted in its draft report (see especially paragraphs 778-788). This is consistent with the Commerce Commission's view (page 12) that "most significantly, the provision of the MTAS at prices above cost represents a barrier to efficient entry and expansion in the retail mobile services market." As already mentioned, this view is well supported by academic research.
4. To illustrate the fact that the combination of on-net discounts and high mobile termination rates can serve as a strategic barrier to entry it may be useful to consider the following highly simplified and hypothetical example: Assume that there is a market with two mobile operators, I and E, and that there are six users on network I (market share: 75%) and two users on network E (market share: 25%). Let us look at a potential ninth customer C with six friends on network I and two friends on network E. Suppose that operator I has an on-net charge of 5 cent per call and an off-net charge of 15 cent per call. If customer C decides to join network I in order to call his eight friends her total cost is 60 cents.
5. Hence, in order to be competitive, operator E has at least to match if not undercut this offer. Even if operator E decides to set an on-net price of zero, the off-net price cannot exceed 10 cents in order to remain competitive (i.e., the total bill must not exceed 60 cents). This implies that operator E cannot make any money on customer C's calls if the mobile termination rate on network I is 10 cent or higher. In contrast, with a termination rate of 10 cents operator I's revenues from customer C's calls net of termination fees are 40 cents. If operator I now uses this surplus to further reduce its prices, operator E either has to leave the market or also reduce its prices and operate at a loss.

¹ See, e.g., Hoernig, S. (2007), On-Net and Off-Net Pricing on Asymmetric Telecommunications Networks, in: *Information Economics and Policy* 19, 171-188, Calzada, J. & Valletti, T. (2008), Competition and Entry Deterrence, in: *The Economic Journal* 118, 1223 – 1244, or Stennek, J. & Tangerås, T. (2008), Intense Network Competition, NET Institute Working Paper # 08-36.

² <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/710&format=HTML&aged=0&language=EN&guiLanguage=nl>

6. The necessity for operator E to discount off-net prices most likely also leads to an imbalance in traffic flows, as calls from E to I are less expensive than calls from I to E. It may be important to note that the Covec report is actually imprecise in this respect. In paragraph 162 of the Covec report it is noted that “if all customers are identical (...) traffic flows will be balanced regardless of market share.” The Covec report furthermore notes that “if network A’s customers make more calls on average than network B’s then there will be a net traffic flow from A to B for any given market share”. This argument is completely correct under the assumption that the two networks’ prices do not differ. If, however, prices differ between networks then the flow of traffic obviously depends on the respective prices for off-net calls.

7. To return to our little example above: If the two customers on network E place a total of 12 (= 2·6) calls to network I’s customers, while the six customers on network I also place a total of 12 calls (= 6·2) to customers on network E, we have indeed a balanced-calling pattern. This assumption, however, ignores the fact that provider E *is forced* to set a lower off-net price than provider I in order to remain competitive to compensate for its smaller market share (or smaller installed customer base). As demonstrated above, network E has no choice but to undercut network I’s off-net tariff.³ Hence, it is more likely that customers on network E place calls to network I then vice versa. As a result, we should observe an unbalanced calling pattern with more traffic flowing from the network with the lower off-net price (which will usually be the smaller network, as outlined above) to the network with the higher off-net price (which will be the larger network).

8. A reduction in MTRs, therefore, clearly serves to reduce barriers to entry and to limit competition in the retail mobile market.

9. It is important to note that the fact that a lowering of MTRs also reduces barriers to entry is largely ignored in Covec report. While the Covec report is correct in that the incentive to compete for customers can be reduced by lower MTRs, this result is based on the assumption of an exogenous number of firms. In fact, Covec’s statement (in paragraph 23) that “a reduction in the MTR will reduce the intensity of competition between mobile networks as it reduces their incentive to compete for new customers”, is only true if the number of firms is exogenous. As I have just argued, however, one of the main rationales for the downward regulation of MTRs is the removal of strategic barriers to entry. If the number of firms is endogenous, market entry will almost always make markets more rather than less competitive. Economic theory and empirical evidence suggest that markets with more firms are more competitive than markets with fewer firms. Any analysis that focuses on competition between incumbent firms only while ignoring the effects on entry and on small operators will systematically underestimate the competitive effects induced by lower MTRs.

10. Put differently, and most importantly, the removal of barriers to entry to the retail mobile market is therefore likely to have first-order effects on welfare and consumer surplus, as lower MTRs allow for more intense competition to unfold through market entry, while other effects such as tariff rebalancing are likely to induce only second order effects.

11. Before I comment on the cost-benefit analyses conducted, let me note, as a general statement, that the welfare effects of enhanced competition are notoriously difficult to estimate due to the dynamic nature of competition. Since it is often almost impossible to predict firms’ business strategies (e.g., with respect to horizontal and vertical product differentiation) and the innovations they may come up with, it is often considered a good approach for public policy to concentrate on market liberalisation and safeguarding the competitive process. Hence, the focus should be on removing artificial barriers to entry and

³ While network E could, in theory, also offer negative prices for on-net calls, this is unrealistic as it would lead to the risk of being used as a “money pump”.

preventing incumbent firms from erecting strategic barriers to entry as far as possible in order to let the firms compete on a level-playing field without further Government intervention.

12. It should also be noted that market competition always involves a shift of rents from one market participant to another. If a market is liberalised and incumbent firms have to lower their prices due to competitive restraints rent is transferred to consumers. Hence, the comment put forward in the Covec report (paragraph 188) that the Telecommunications Act was not designed to serve as a tool for significant redistribution of rents must be qualified. If the Act serves “to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand”, as laid out in section 18 of that Act, then it is inevitable that this involves shifting rents.

Comments on the Cost-Benefit-Analysis Conducted by Concept Economics

13. Having noted the general difficulties of adequately predicting by how much consumers exactly benefit from enhanced competition, there is a general presumption that competition benefits consumers apart from rather special circumstances.

14. My overall assessment of the cost-benefit analysis (CBA) conducted by Concept Economics is that it has been conducted in a competent and transparent manner. Most importantly, Concept Economics has identified the most relevant counterfactual for the case at hand, namely the case where the third entrant is not able to viably compete against the two incumbents.

15. As with any cost-benefit-analysis of future policy changes the analysis has to rest on assumptions and predictions which can be criticised. In addition, a number of factors have been ignored to keep the analysis manageable.

16. One criticism of the Concept Economics CBA may be that the estimated demand elasticities are rather at the upper end of what has been reported in the academic literature. One justification for this approach could be, however, that according to the OECD Communications Outlook 2009 voice minutes per subscriber are rather low in New Zealand, while prices are comparatively high, as outlined by the Commerce Commission and the submission by Concept Economics on the Commission’s Draft Report (page 5) and examined in more detail in their current report. Hence, international elasticity estimates may be lower than in New Zealand. Put differently, the two incumbents may currently set prices within the elastic region of the demand curve. Recalculations with smaller voice demand elasticities (between -0.8 and -0.4) suggest that the additional consumer surplus only decreases by 5-19%. The additional total surplus decreases by more than this, but even under an elasticity of -0.4 it is in the range of \$150m to \$701m (excluding the terminal value).⁴

17. Another criticism is that the transfer to consumers may be a bit optimistic, as it is assumed that all consumers benefit from the average price cuts. As private households may exhibit some inertia in their behaviour, they may stick to more expensive calling plans even when cheaper plans are available. This argument is less valid, however, for business customers and prepay customers who make up the vast majority of private consumers. One has to note though that the effect on total surplus may be small, as customer inertia may mainly effect how the surplus is split between consumers and producers, as the most price sensitive customers (who are important for the allocative efficiency gain) should be the least inert.

⁴ I do not have access to the full model given that it contains Restricted Information. Therefore, these recalculations have been performed by Concept Economics at my request.

18. With respect to the terminal value, I am a bit sceptical about the counterfactual. If MTRs were not regulated, the Commerce Commission or another Government may still decide to regulate MTRs in 2015 in order to correct a mistake. Hence, there may be an endless variety of counterfactuals after 2015. What the terminal value shows, however, is how drastic the welfare loss and the loss of consumer surplus become if a harmful policy would not be corrected.

19. Furthermore, additional refinements to the CBA provided are possible, at least theoretically. On the one hand, one could, for example, introduce consumer switching costs which would reduce consumer surplus (even though these costs are reduced with the introduction of mobile number portability). On the other hand, one could also introduce some consumer benefits of further product differentiation, which would increase consumer surplus. Similarly, one may analyse different demand elasticities for different operators, private and business customers, prepay and postpay customers, and so on. This would require further assumptions and involve additional costs of analysis, while the additional insights or benefits generated may be rather limited. Given the sensitivity analysis provided by Concept Economics for their CBA with two factual scenarios (with factual B being quite conservative), it seems reasonable to me not to further refine the analysis into this direction.

20. Possibly the most severe point of criticism is the main topic of the Covec report, namely that the CBA by Concept Economics does not explicitly account for any waterbed effect of lower termination revenues and the potential consequences for fixed-line customers.

21. With respect to FTM it is hard to conceive that a regulation of MTRs will harm fixed-line customers. While one may debate the height of the pass-through rate (as the Covec Report does), neither enhanced competition nor lower MTRs can reasonably harm fixed-line customers. Hence, any benefits from lower MTRs will benefit either fixed-line operators or fixed-line customers and comes on top of the benefits from increase competition in retail mobile markets.

22. Regarding potential waterbed effects the main question is how strong this effect will be, which will be discussed in the next section.

Comments on the Covec Report

23. The Covec report argues that the relevant counterfactual should include the presence of 2degrees in the mobile telecommunications market. Put differently, it is argued that the number of competitors should be treated as exogenous. This position contrasts with both the relevant academic literature cited above (see footnote 1) and one of many policy makers' most severe concerns with respect to MTRs. Taking the number of firms as exogenous misses one of the important benefits of lower MTRs as explained above.

24. Treating the number of mobile operators as exogenous has severe implications for the analysis of costs and benefits of MTM regulation, but also for the analysis of FTM termination rates. In the following, let me comment on these two issues in turn.

The Strength of the Waterbed Effect

25. While it is clear from both theoretical models as well as empirical research that a waterbed effect can exist, the strength of the effect will depend on various parameters such as the mobile penetration rate and the degree of competition.

26. The Covec report argues (paragraph 20) that the waterbed effect increases with penetration. This contrasts with empirical research funded by Vodafone, which has come to

the opposite conclusion: “A positive coefficient [of 1.422, own insert] indicates that the waterbed effect is lower in higher penetration markets. Intuitively, low penetration markets usually consist of heavy users for whom the waterbed effect is expected to be strong. But as the market becomes more saturated, this typically involves attracting marginal users who make and receive very few calls. Hence, we expect the waterbed effect to decrease as the market becomes more saturated because of the different types of consumers that are drawn into the mobile customer pool” (Genakos and Valletti, 2008, p. 21).

27. The same study also finds a reasonably strong waterbed effect. It should be noted though that Genakos and Valletti (2008, p. 20) explicitly point out that they take the number of competitors as exogenous. While the authors control for the number of competitors, they do not control whether MTR regulation may have helped or even induced entry. While in such cases the authors may find a strong waterbed effect, this may be *inseparably connected* with the countervailing effect of entry and enhanced competition. The study is unfortunately silent (probably due to data limitations) on the interrelationship between the waterbed effect and entry. Hence, its results should be digested with great caution in the specific New Zealand context.

28. Maybe most importantly, it should be noted that Genakos and Valletti (2008) do not control for any asymmetry between mobile operators which is likely to affect traffic flows (and, therefore, also the size of the absolute and relative “war chest” to compete for customers). The number of firms should be far less important than their asymmetry, as argued above and also by the Commerce Commission in its draft report.

29. Note that the market shares of Telecom New Zealand and Vodafone are roughly similar in New Zealand. Under standards of article 82 of the European Treaty it is most likely that Telecom New Zealand and Vodafone would be found to have a position of joint dominance. Also note that the comparative performance of the retail mobile market in New Zealand does not suggest that competition is overly intense. The very fact that a third operator is willing to enter a rather small market under reasonably adverse conditions suggest that there are currently rents which have not been competed away, but are sufficiently high to induce market entry.

30. These observations suggest that competition between the two incumbent operators is not of an intensity that would give rise to a strong waterbed effect. Therefore, I consider the assumed 75% waterbed effect to be overly optimistic. Given the high penetration rate and the low degree of competition I expect the waterbed effect to be much weaker, as suggested by the Commerce Commission in its Draft Report.

31. Finally, it should be noted that, if the waterbed effect was strong, 2degrees customers would be “cross-subsidising” Vodafone and Telecom customers, which would be a significant barrier to entry for newcomers and detrimental to competition. The effect would be similar to a license fee that must be paid to the incumbents to be allowed into a market.

The Estimated FTM Pass-Through Rate

32. The FTM pass-through rate clearly depends on the degree of competition in the retail market for calls from fixed telecommunications networks. The Covec Report (paragraphs 102-104) estimates a constant pass-through rate of changes in the MTR on the FTM price between 24% and 57%.

33. As the pass-through rate depends on the degree of competition in the retail market for calls from fixed telecommunications networks, however, the pass-through rate should have changed, insofar as competition in this market has increased between 1997 and 2007. The

latter should be expected due to a number of regulatory measures, such as the introduction of the current regulatory regime in 2001 and the introduction of wholesale line rental. The introduction of unbundling should also increase competition in fixed-line markets and, therefore, lead to higher pass-through rates after 2007. The time trend included in the estimations by Covec may be too crude an indicator to account for the changing degree of competition in fixed-line telephony.

34. Given an estimated pass-through rate of 41% the Covec report is effectively suggesting that competition in fixed-line telephony is not working properly,⁵ as cost reductions are only very limitedly transferred into price reductions. While this may possibly call for further regulatory action in the fixed-line telephony market (if this finding can be further substantiated), it should hardly be used as argument to (also) prevent competition in mobile telecommunications markets.

35. What appears to be most intriguing to me: It is rather surprising that the MTR FTM pass-through rate is estimated to be between 24 and 57% in fixed-line telephony, while a 75% waterbed effect (paragraph 142) is regarded as reasonable by Covec. This appears to suggest that the competition between two jointly dominant mobile operators is stronger than competition between fixed-line telephony providers in a market with low barriers to entry and numerous providers. Since it is well accepted in economics that pass-through rates increase with the degree of competition, the question remains why competition in fixed-line telephony would be so weak.

Subscription Elasticities

36. The Covec report is correct in that subscriber elasticities need to be taken into account to refine the analysis. In my opinion, however, one should treat historical estimates of subscriber demand elasticities with great caution in a case where the competitive landscape is completely changing due to a third market entrant. There are a number of reasons why historical estimates may not be robust against structural changes in the market place. First of all, the general price level is likely to fall after successful entry. Hence, the general competition effect is likely to dominate any waterbed effects, as outlined above. Secondly, there may be substantial benefits of additional non-price competition (such different product positioning, branding, etc.), which may attract customers to certain networks or increase their loyalty. Thirdly, consumers may be “loss averse”. Who is willing to give up a mobile phone once she has experienced its amenities?

37. To put this discussion into perspective once more, let me reiterate that the question of the correct subscriber elasticity is associated with the *indirect* (second order) effects of lower MTRs, while the *direct* effect (first order) of increased competition is likely to dominate the second order effect. Put differently, if increased competition leads to lower overall mobile prices (after accounting for indirect waterbed effects), accounting for subscription elasticities should even strengthen the case for lower MTRs.

Conclusion

38. While some refinements of the cost-benefit-analysis provided by Concept Economics are certainly possible, it is unlikely in my view that these, if reasonably implemented, would materially change the qualitative result, i.e. that a reduction of strategic barriers to entry and enhanced competition benefits consumers. In comparing the CBA provided by Concept

⁵ As a side remark: The curvature of market demand (mentioned in paragraph 118 of the Covec Report) should be the more important for the pass-through rate the less competitive the fixed-line market is.

Economics and the Covec report, one should note that Concept Economics focus on first-order effects (namely enhanced competition) while neglecting some second-order effects (tariff rebalancing), while the Covec report concentrates on second-order effects (tariff rebalancing) while ignoring first-order effects (enhanced competition). The key difference is that Covec ignores that positive competition effect of lower MTRs due to additional market entry and fiercer competition from entrants. I am sceptical that an approach that would allow market foreclosure in order to find optimal tariffs would be superior to an approach which sets a level-playing field in order to let competitive processes work.