

# Cost-Benefit Analysis of Mobile Termination Rate Regulation Excluding Calls to 027

16 May 2005

## Introduction

We have been asked by Vodafone New Zealand to analyse the effects on the cost-benefit analysis of mobile termination rate regulation if Telecom's 027 network is excluded from the regulation. If the 027 network is excluded, only calls that terminate on Vodafone's 021 network and Telecom's 025 network will be included in the regulation and the cost-benefit analysis.<sup>1</sup>

In our previous submission on the Commission's Draft Report, we presented an alternative cost-benefit model based on an econometric analysis of historic data on fixed-to-mobile prices and quantities, and alternative counterfactual and factual assumptions. In this report, we present results of the impact of excluding 027 on both our own cost-benefit model and the cost-benefit model used by the Commission in its Draft Report.

## Destinations of Fixed-to-Mobile Calls

The first step in examining this issue is to estimate the fraction of fixed-to-mobile calls that terminate on 027. Diagram 3 of the Commission's Draft Report gives the market shares of Telecom and Vodafone, but does not disaggregate the Telecom figures into 027 and 025 networks. We assume that fixed-to-mobile calls to Telecom and Vodafone are made in proportion to the market shares given in Diagram 3. In 2004, Vodafone's market share was approximately 55%, and Telecom's was approximately 45%. Thus we assume that, in 2004, 55% of all fixed-to-mobile calls terminated on Vodafone's network, and 45% terminated on either Telecom's 027 or 025 networks. Trends in mobile network market shares into the future are likely to be difficult to predict accurately. We therefore assume that these market shares remain constant over the relevant forecast period out to 2010.

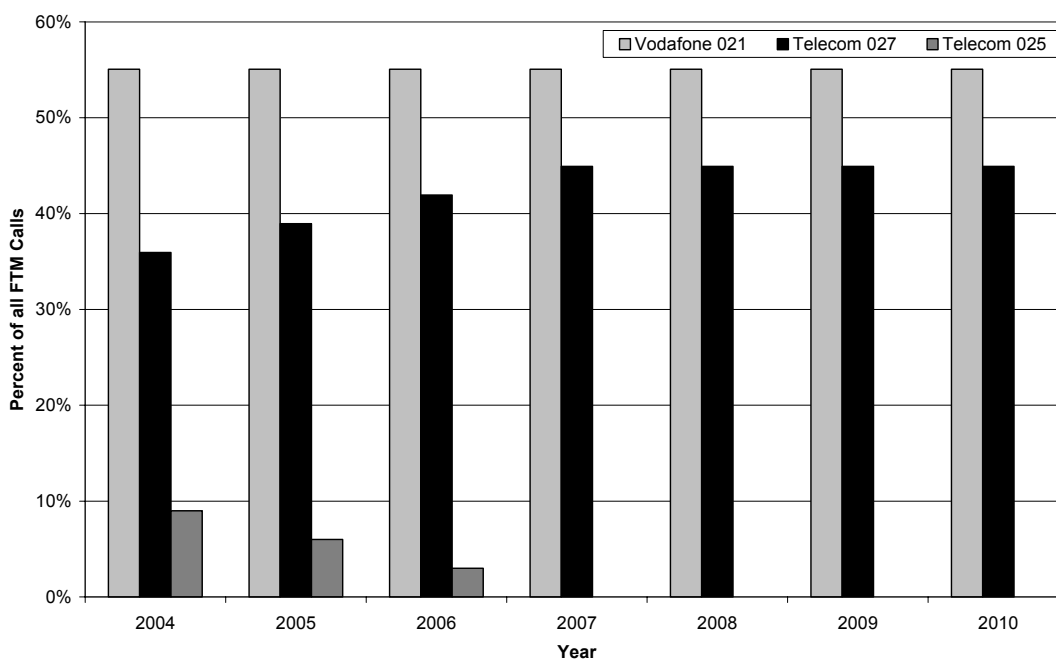
At the mobile termination conference, TelstraClear stated that currently over 90% of its fixed-to-mobile traffic that terminates on a Telecom mobile handset terminates on the

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<sup>1</sup> TelstraClear resells access to Vodafone's 021 network with an 029 prefix. We do not separate these calls from calls to 021.

027 network.<sup>2</sup> While there is no reason to suggest that TelstraClear fixed-line customers are different from the average fixed-line customer, we make the more conservative assumption that in 2004, 80% of fixed-to-mobile traffic that goes to Telecom terminates on the 027 network.

Looking forwards, Telecom is in the process of phasing out its 025 network and migrating 025 customers over to 027. While the exact date by which this will be achieved is unknown, we believe a conservative estimate is that this will be completed by 2007.<sup>3</sup> From now to 2007, the speed with which the remaining 025 customers migrate to 027 is unknown. We therefore assume that the fraction of calls to Telecom that terminate on 027 increases linearly from 80% in 2004 to 100% in 2007. We then calculate the fraction of all fixed-to-mobile calls that terminate on 027 or 025 as Telecom’s overall mobile market share multiplied by the fraction of calls to Telecom that terminate on 027 or 025. Figure 1 shows our assumptions about the destinations of fixed-to-mobile calls that result from these calculations.



**Figure 1** Assumed Destinations of Fixed-to-Mobile Calls.

<sup>2</sup> Day 2, transcript page 226.

<sup>3</sup> Both of these assumptions about Telecom’s share of F2M terminating traffic are ‘conservative’ in the sense of being designed to **understate** the number of such calls terminated on Telecom’s 027 network. To the extent excluding 027 traffic from any service specification creates problems, these assumptions therefore **understate** the magnitude of those problems.

## Effects on Benefits of Regulation

If calls to Telecom's 027 network are excluded from the regulation, we assume that the termination rate for these calls will remain at the counterfactual termination rate. We also assume that retail prices for fixed-to-mobile calls to 027 do not change from the counterfactual. The first of these assumptions seems entirely consistent with Telecom's request for this traffic to be excluded from regulation. The second is also reasonable since Telecom dominates the retail market for fixed-to-mobile calls. Under these assumptions there will be no benefits from regulation to fixed-line callers who call to 027 mobile numbers.

As it is impossible to know exactly which fixed-to-mobile calls go to which mobile network, we adjust benefits in the cost-benefit analysis by simply scaling back the benefits by the proportion of calls that terminate on 027, as shown in Figure 1. This means that benefits are reduced by 42% in 2006 and 45% for 2007 to 2010. This is the same as assuming that all fixed-to-mobile calls along the demand curve for these calls are randomly distributed across the mobile networks in proportion to the shares of each network in termination. That is, we assume there is no correlation between consumers' willingness to pay for fixed-to-mobile calls and the destination network.

## Effects on Costs

We assume that the direct costs of regulation remain the same regardless of whether 027 is included or excluded. The effects on indirect costs are less clear. Under the Commission's methodology, indirect costs are proportional to the benefits of regulation. Since excluding 027 reduces the benefits, it will also reduce the indirect costs. As we have previously argued, we believe this methodology is flawed and biased towards generating positive net-benefit numbers.

Furthermore, we do not believe that excluding 027 will result in a proportionate reduction in indirect costs, and could even result in an increase in such costs. There may indeed be lower indirect costs imposed on Telecom, as its ability to set prices on 027 is unconstrained by regulation. However, such asymmetric regulation is likely to affect the nature of competition between Telecom and Vodafone in the mobile market. As it will mean that Vodafone is constrained while Telecom is largely unconstrained, there may be a negative impact on the intensity of competition in the mobile market. Such asymmetric regulation may also accelerate the rate at which Telecom attempts to migrate customers from 025 to 027, and this rate may exceed the socially optimal rate of adoption of the new technology. These issues are likely to raise additional indirect costs that offset any savings in indirect costs faced by Telecom. We believe that further analysis into the nature of competition in the mobile market and the effects of asymmetric regulation is necessary to properly assess the indirect costs arising from such regulation.

## Overall Effects on Net Benefits

At this stage, we present our results for two different scenarios on indirect costs that attempt to capture some of the possibilities. In the first scenario (labelled ‘*Low*’ in the Table below), we assume that indirect costs are unchanged from their level when calls to 027 were included in the regulation. In the second (‘*High*’) scenario, we assume that indirect costs reduce in proportion to the proportion of calls that terminate on 027. Our criticisms of the Draft Report’s method for calculating indirect costs notwithstanding, these scenarios may give an indicative range for the indirect costs.

As we have previously argued, the results of the cost-benefit analysis depend crucially on the assumptions about the counterfactual prices and quantities and the factual rate of pass-through of lower termination rates to fixed-to-mobile retail prices. We present results of the effects of excluding 027 using the Draft Report’s cost-benefit model and its counterfactual and factual assumptions.<sup>4</sup> We also present results of the effects of excluding 027 using the cost-benefit model and counterfactual and factual assumptions from our earlier submission.<sup>5</sup>

Table 1 shows our findings. The Draft Report originally found net consumer benefits of between \$185.6m and \$217.3m. We find that if calls to 027 are excluded, net consumer benefits would fall to between \$68.9m and \$115.9m under the Draft Report assumptions. Similarly, the Draft Report’s public benefits of around \$27m fall to between \$7.0m and \$10.9m. In our submission on the Draft Report, we found net consumer benefits of between -\$6.2m and \$67.0m. If 027 is excluded, we find these net benefits fall to between -\$8.2m and \$32.8m under our assumptions, and public benefits fall from between -\$9.0m to \$1.5m to between -\$9.3m and -\$3.4m.

**Table 1** Cost-Benefit Analysis Results (NPV, 2004 \$m).

Scenario	Consumer Benefits			Public Benefits		
	Original	Excluding 027		Original	Excluding 027	
		<i>Low</i>	<i>High</i>		<i>Low</i>	<i>High</i>
Draft Report Factual 1	217.3	79.8	115.9	27.2	7.7	10.8
Draft Report Factual 2	185.6	68.9	99.2	27.0	7.0	10.9
Covec Factual 1	67.0	21.2	32.8	1.5	-4.9	-3.4
Covec Factual 2	-6.2	-8.2	-7.7	-9.0	-9.3	-9.2
Covec Factual 3	54.8	16.9	26.4	0.9	-5.1	-3.7

<sup>4</sup> We have modified the Commission’s model to correct two minor errors, in the discounting of direct costs and the calculation of indirect costs in the public benefits case. We explain these errors in more detail in our earlier submission, *Modelling Regulation of Mobile Termination Rates*, 25 November 2004.

<sup>5</sup> *Modelling Regulation of Mobile Termination Rates*, 25 November 2004.

## Concluding Comment

In our view the Commission should be very concerned about the impact that excluding 027 could have on the mobile sector. This is not only because it would significantly reduce the net benefits from regulation, even under the Commission's modelling assumptions. It is also because of the potential it has to seriously distort competition in this sector. Three points are relevant in this regard.

First, as we have emphasised earlier, there is a very weak and indirect relationship between termination rates and fixed-to-mobile prices. If we were studying the market for bread and there were two main suppliers and it was proposed to regulate downwards the retail prices of the largest supplier then one might reasonably expect the other main supplier would feel obliged to follow the price cut. Such a chain of reasoning is not available to the Commission in this case. Not only is it considering regulation of a wholesale price, the firm it is considering excluding from that regulation is dominant in the relevant retail market. Simple reasoning by analogy with retail regulation would be grossly inadequate in these circumstances.

Second one can readily conceive of competitive responses to 027 exclusion that would seriously distort the process of mobile competition. Telecom could simply maintain its 027 termination rates at counterfactual levels and continue to collect termination revenue from TelstraClear and other fixed-line operators. This would weaken ability of TelstraClear and other operators to cut fixed-to-mobile prices and therefore reduce the incentive for Telecom to do so. The result would be lower pass-through rates associated with MTR regulation and higher pure transfers from Vodafone to Telecom and TelstraClear and other operators. Vodafone would be constrained in its attempts to rebalancing tariffs as Telecom used its transfer revenue to 'buy' mobile market share from Vodafone. Investment in the mobile sector would fall as Vodafone reacted to a 'no-win' environment by scaling back its capex programme. In this scenario, fixed-to-mobile callers are no better off, mobile users are progressively worse off, and Telecom reassumes its traditional dominance of the New Zealand telecommunications sector.

Finally, it seems clear from the Telecommunications Act that Parliament intended it to be primarily a constraint on Telecom. The initial designations in Schedule 1 were all designed to address fixed-line issues. The only mobile sector issues in the Schedule were listed as specified services. This reflects the competitive reality, which is that many fixed line services are a competitive bottleneck, but there is nationwide facilities based competition in mobiles. Given this context, it would seem quite unreasonable to exclude Telecom from any designation of mobile termination rates. Recent history suggests that Vodafone has the potential to seriously challenge Telecom's dominance of the telecommunications industry in New Zealand. The Commission should be very wary of undermining its ability to do so.