

Comments on the MTAS Conference 'Whiteboard' Examples

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1 Executive Summary

1. At the MTAS conference on 2 and 3 September, the Commission presented numerical examples of average mobile voice and text prices and asked the economic experts present whether or not the examples represented market foreclosure. The examples are reproduced below in Table 1. The basic question is whether the combination of the current MTR levels and on-net prices will prevent an entrant from competing with existing offers.
2. In this note, prepared independently following the code for expert witnesses and using facts known to us at the time of the conference, we discuss these examples and make the following points:
 - The focus on on-net pricing is inconsistent with the Commission's own market definition that assumes mobile operators compete in bundles of services. Being narrower than the Commission's market definition, it is biased towards suggesting there is a competition problem.
 - The use of overall averages obscures relevant details of the retail mobile market:
 - The average prices presented do not reflect the average prices faced by most mobile consumers because the averages are distorted by very high usage of a relatively small number of users on flat-rate closed user group plans (the usage distribution across consumers is extremely skewed). Most mobile users therefore face a higher on-net price than the overall average price.
 - On-net voice calling plans currently offered are only closed user group plans (not blanket on-net discounts), most mobile subscribers do not in fact use such plans, and the extent of 'linking' between calling circles is limited.
 - For SMS, there is a strong tendency for traffic flows between networks to be balanced, even when the networks offer different retail pricing, because consumers tend to reply to text messages that they receive.

- All of these facts make life easier for an entrant than is suggested by the average data presented by the Commission. Any network can offer on-net calling plans and compete for small groups of subscribers. Most subscribers face higher on-net prices than the average, and it is not necessary to offer a low blanket 'any-net' price to compete.
- The Commission's examples also ignore the reality of the commercial interconnection agreement between Vodafone and 2degrees, and do not reflect the terms and conditions of that agreement. The examples are therefore of little relevance for assessing whether or not 2degrees faces a foreclosure problem.
- Overall, the examples presented by the Commission do not contain enough information to determine whether there is a foreclosure problem in the mobile market, and in our view there is no such problem.

2 Introduction

3. At the MTAS conference on 2 and 3 September, the Commission presented numerical examples of average mobile voice and text prices on a whiteboard and asked the economic experts present (including us) whether or not the examples represented market foreclosure. The numbers in the examples were hypothetical for confidentiality reasons, but the Commission said the figures were generally representative of actual figures that it had calculated from confidential information provided to it by Vodafone and Telecom. The examples are reproduced below in Table 1.

Table 1 The Commission's examples.

	Voice		SMS	
	cpm	% traffic	cptx	% traffic
Avg. off-net price	55	20%	25	10%
Avg. on-net price	20	80%	5	90%
After 18% retail costs	16		4	
Implied MTRs (50%)	8		2	
Current MTRs	20		20	
On-net discount	35		20	
On-net discount / off-net price	64%		80%	

4. While at first glance the examples appear simple, they are in fact a highly aggregated representation of complex outcomes in the retail mobile market, and the question of whether or not they represent foreclosure is therefore not a straightforward one. To answer this question requires understanding what lies behind these averages, as we will discuss in this report.
5. In our view, there was not adequate time at the MTAS conference for us to fully understand the examples in order to properly answer the Commission's question. This is clear from the transcript. We appreciate the opportunity to comment further on these examples, and believe that the Commission will benefit from the additional analysis that we and the other experts will be able to provide now that we have had adequate time to consider the examples.

6. We have read and understood the code for expert witnesses that the Commission distributed prior to the MTAS conference, and we have prepared this note independently and in accordance with that code. All facts in this report were known to us at the time of the conference, and these facts are relevant for answering the Commission's question.
7. In this report, we first define and briefly discuss foreclosure, to make it clear what question we are answering. We then provide some high-level comments on both examples, and finally consider the voice and SMS examples in turn.

3 Foreclosure

8. Foreclosure is a situation where an efficient entrant cannot profitably enter a market. This could be of concern from a competition policy perspective if it was due to the pricing or other strategic behaviour of the incumbent(s), rather than just natural monopoly for example.
9. There are a number of ways that an incumbent can attempt to deliberately foreclose a market, including predatory pricing, leveraging market power from one market into another by using bundling, and exclusive vertical relationships. Such strategies are necessarily costly for the incumbent and need to be weighed against the alternative strategy of accommodating entry. An incumbent will only attempt foreclosure when it is expected to be more profitable than accommodating entry, which is not always the case.
10. While it still could happen, foreclosure is less likely to occur when there is competition between incumbents compared to when there is a single incumbent, as each competitor will have an incentive to free-ride on the other's costly foreclosure strategy.

4 Comments on Both Examples

11. At a high level, the Commission's concern about foreclosure in relation to the two examples is based on the premise that an entrant must offer an any-net price that competes with the existing operators' average on-net price. However, competition between mobile operators occurs in many dimensions, of which on-net pricing is just one. Operators can and do also compete over off-net prices, any-net prices, service quality, data pricing, subscription pricing, handsets, and coverage.
12. In general terms, mobile networks compete over a bundle of services and prices. A reasonable starting point would be to define the product dimension of the relevant market to include all of the services within common bundles. This is consistent with the Commission's approach to market definition in the MTAS investigation Draft Report, where the Commission recognised that mobile operators compete in bundles of services

and defined a single retail mobile market encompassing calling, SMS, MMS and data services.¹

13. In contrast, by focussing entirely on average on-net prices in the examples presented at the conference, the Commission is considering only a subset of the relevant market. This creates a bias towards inferring that there is a competition problem. The risk is that the Commission will overlook profitable opportunities for an entrant to compete (e.g. offering lower off-net prices or lower data prices).

5 The Voice Example

14. The Commission's concern in the examples it presented appears to be that an entrant cannot offer voice prices that compete with the on-net prices of the existing firms, given the level of the MTR. In the voice example, the average on-net price is 20 cpm, which is equal to the MTR. Taking into account an entrant's cost of origination and retailing, it would have to price off-net calls at significantly greater than 20 cpm to avoid making a loss on these calls. An entrant's off-net price will therefore be greater than the incumbents' average on-net price.
15. An entrant could still profitably compete with the average off-net price of 55 cpm, but since this represents only 20% of all minutes in the example, and since in the beginning the entrant's network will be small so there may be fewer opportunities for its customers to make on-net calls, it appears that in the example the entrant would face difficulty competing for the majority of voice minutes. It is the apparently 'toxic combination' of low on-net prices and a relatively high MTR that makes entry difficult.
16. However, the reality is more complex than the simple example presented at the MTAS conference. The use of high-level averages obscures the true nature of retail competition in the New Zealand mobile market. For voice calls, there are a number of facts that affect the average on-net price and also mean that the average on-net price is not a good indicator of how easy or difficult it will be for a new entrant to compete. All of these facts are supported by data about Vodafone customers. The relevant facts are:
 - On-net voice calling plans that are currently offered are flat-rate closed user group plans, such as Vodafone's 'Bestmate' and 'Family' plans. Blanket discounted on-net voice prices are not offered.
 - Users of flat-rate closed user group plans generally have high usage relative to customers who do not use such plans.
 - Within users of such flat-rate plans, the distribution of usage is highly skewed, with a relatively small fraction of high-volume users accounting for a very disproportionate share of the traffic generated by flat-rate plan users.

¹ Paragraphs 144 to 147 of the Draft Report.

- While users of closed user group plans use them heavily, most mobile subscribers do not in fact use such a pricing plan.
 - The extent of 'linking' between calling circles is limited. Among Vodafone Bestmates, a significant number of the calling circles consist of only two people who are not members of any other circles.
 - There is not a large difference in the rates of churn of people on on-net plans compared to those who are not.
 - In respect of 2degrees, the actual terms and conditions of its interconnection agreement with Vodafone are relevant for determining whether 2degrees faces a foreclosure problem. The Commission's example does not accurately reflect the 2degrees-Vodafone interconnection agreement.
17. The above facts have a number of implications. First, since low on-net prices are driven by closed user group pricing, it does not follow that the average price to call *anyone* on-net is low. Low prices are only available for calls to small groups. The task would be very much tougher for a new entrant if these voice plans were available to *anyone* on-net. Under the current structure of prices, it is not necessary for an entrant to offer low any-net pricing to compete with the existing on-net pricing.
 18. Second, the average on-net price (20 cpm in the Commission's example) is heavily influenced by the skewed usage distribution: there is very high usage of a relatively small number of subscribers on flat-rate closed group plans. This is a segment of the relevant market rather than the whole market. The corollary to this is that the majority of subscribers (including many of the users of flat-rate plans) face significantly higher on-net prices than is indicated by the overall average.
 19. Third, since most mobile subscribers do not use on-net voice plans, there is still a very large segment of the market that an entrant can compete for regardless of whether or not it can compete with the current on-net offers.
 20. Fourth, if an entrant does decide to compete for the relatively small segment of people who use closed user group pricing plans intensively, the competitive strategy is very obvious, namely to offer similar plans. Since the extent of linking between calling circles is limited, it should be feasible for an entrant to attract groups of two or three subscribers to its network using such a strategy. There is a large number of such groups that are not 'connected' to any other calling circles.
 21. Finally, with specific reference to 2degrees, we suggest that the Commission may wish to seek to monitor this firm's inter-network traffic and model revenue flows by pricing this traffic at the prevailing interconnection rates. This would allow the Commission to test its theories regarding foreclosure, and the ability of 2degrees to compete more generally.
 22. In our view, the market facts that lie behind the relatively low average on-net price in the Commission's voice example mean that there is no sense in which the relevant

market is foreclosed. Very low on-net prices are enjoyed by only a small share of the relevant market who use flat-rate closed user group pricing plans intensively. This leaves a large segment of the market that face higher on-net prices that an entrant will likely have no difficulty competing for at the current level of the voice MTR. The Commission's voice example therefore does not demonstrate a competition problem that needs MTR regulation to fix.

6 The SMS Example

23. The SMS example has the same basic structure as the voice example. Our views on this example are similar to those given above for the voice example, but there are some important differences.
24. As with voice, the average on-net SMS price is distorted by high usage by a relatively small number of subscribers on closed-group flat-rate plans. Again, a small fraction of customers generate the majority of traffic generated by users of flat-rate plans. Thus the majority of users on flat-rate plans have effective on-net SMS prices that are higher than the average flat-rate user, and those customers who do not use a flat-rate plan probably face even higher on-net prices.
25. Therefore, as with voice, using a single overall average SMS price gives a distorted view of an entrant's ability to compete with on-net pricing. And again, there is a large segment of the market that does not use a closed-group plan.
26. However, unlike for voice, Vodafone does offer the blanket 'Text 2000' on-net text bundle. Thus an additional question that arises with SMS that does not arise with voice is whether an entrant can compete with such a blanket offer.
27. We first note that if the average on-net text price is 5 cpts as in the Commission's example then an entrant would not have to offer the same price for texts to any network to be able to compete, as the existing price applies to on-net texts only. For Telecom and Vodafone customers, this corresponds to texts to about half of the market. An entrant could therefore offer an any-net text price greater than 5 cpts and still be able to compete with the on-net offers.
28. In the Commission's example, the average SMS price is 7 cpts (10% at 25 cpts and 90% at 5 cpts), and one way that an entrant could compete with the existing on- and off-net SMS prices is by offering this as an any-net price, although that might or might not work in practice. So suppose instead that in order to be able to compete, the entrant must offer an any-net text price that does not enable it to cover its costs of origination and the text termination rate (20 cpts in the example). The question is whether this would be unprofitable for the entrant.
29. Once we take account of the fact that any given SMS is usually part of a chain of two-way communication and it will generate a response with high probability, we believe that an entrant will be able to compete with the current on-net offers. This is because an off-net text generated by one of its customers also generates, with very high probability,

an incoming off-net text from the recipient of the original message. This generates termination revenues which offset any losses on the original text.

30. This is a key piece of analysis that is missing from the Commission's SMS example. Since outgoing SMS traffic generates traffic in the reverse direction, analysis of whether or not current MTRs and on-net prices prevent entrants from competing for SMS traffic depends on the net traffic flows that are generated once the tendency to reply is taken into account. The evidence that we have seen (see below) suggests that there is a strong tendency for SMS traffic between networks to be balanced.
31. Interestingly, the tendency for SMS traffic between networks to be balanced due to replying appears to continue to be true even when two networks charge quite different prices for SMS. We have examined the SMS traffic flows between Telecom and Vodafone over time, and have found them to be nearly balanced and highly correlated. The balance of traffic has remained remarkably stable over time. This was true even when Telecom was offering \$10 Text (i.e. a very low price for texts to any network) while Vodafone's price for off-net texts was much higher. The data shows quite clearly that an increase in outgoing texts from Telecom to Vodafone following the introduction of \$10 Text occurred simultaneously with an increase in texts in the reverse direction. Thus, even though retail prices do generally influence SMS usage, the evidence in respect of SMS is that notwithstanding very different outgoing SMS prices, Telecom's unilateral \$10 text offer appears to have stimulated off-net text volumes of both Telecom and Vodafone customers.
32. Therefore, we expect that if an entrant were to offer a relatively low price for texts to any network, it would not run the risk of generating a large net SMS termination payment to the other networks. In combination with the other factors discussed above, this leads us to the conclusion that the market for SMS is also not foreclosed. Again, when considering the position of 2degrees, the commercial interconnection agreement with Vodafone must be taken into account.
33. Nevertheless, while this evidence certainly suggests there is not likely to be a foreclosure problem, we appreciate that what was true several years ago when Telecom launched \$10 Text may not be still true today. Therefore, the Commission may wish to monitor traffic between 2degrees and other operators, and apply the prevailing interconnection rates to calculate the net financial impact, under both regulated and non-regulated scenarios.