

Report for TelstraClear

Passthrough of mobile termination rates

Comments on Appendix I of the
Vodafone cross-submission

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0 Executive summary

Network Strategies has been requested by TelstraClear to comment on Vodafone's new discussion of mobile termination rate (MTR) passthrough, presented in Appendix 1 of its cross-submission to the Commerce Commission on mobile termination¹. Our focus is on:

- the compliance of the MTRs with forward-looking cost orientation
- the validity of Vodafone's passthrough calculation methodology.

Network Strategies recommends that the Commission rejects the results of Vodafone's analysis of passthrough levels because:

- Of the jurisdictions included in Vodafone's sample only Austria and the UK have implemented FLCB MTRs, and in Sweden the MTR is 50:50 forward-looking cost:historical cost based. Therefore, the average passthrough levels presented by Vodafone cannot accurately inform us as to the likely passthrough when MTRs are brought closer to cost and the resultant increase in retail FTM competition.
- Vodafone's analysis assumes average rates of passthrough over a 4 year period. In fact, we would expect passthrough levels to be increasing to the extent that MTRs are moving closer to cost over the period. Therefore, the model is likely to underestimate the likely level of passthrough.
- Network Strategies notes that jurisdictions with very high FTM prices may have greater scope for price reductions than jurisdictions with average or lower FTM prices.

¹ Vodafone (2006) *Schedule 3 Investigation into Mobile Termination: Cross submission on submissions on Reconsideration Draft Report*, 21 February 2006.

Given that New Zealand's MTRs are significantly above cost estimates and its FTM prices are amongst the highest in the OECD there could be scope for an above average level of passthrough.

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1 Introduction

Network Strategies has been requested by TelstraClear to comment on Vodafone's discussion of new mobile termination rate (MTR) passthrough data included in Appendix 1 of its cross-submission to the Commerce Commission on mobile termination².

Vodafone has estimated passthrough levels for a selection of jurisdictions (Exhibit 1.1 and Exhibit 1.2).

² Vodafone (2006) *Schedule 3 Investigation into Mobile Termination: Cross submission on submissions on Reconsideration Draft Report*, 21 February 2006.

<i>Country</i>	<i>Passthrough level (business)</i>	<i>Regulatory environment for FTM</i>
UK BT	119%	FTM regulated as part of price cap
UK ntl	114%	None
Switzerland	113%	None
Greece	105%	Regulated FTM mark-up
Italy	94%	Regulated FTM mark-up
Portugal	92%	Regulated FTM mark-up
Factual forecast	92%	
Netherlands	79%	Regulated FTM mark-up
Ireland	77%	FTM regulated as part of price cap
NZ historical	76%	
Spain	74%	FTM regulated as part of price cap
Australia:		
Telstra	69%	None
France	55%	Regulated FTM mark-up
Belgium	41%	Regulated FTM mark-up
Denmark	18%	None
Norway	12%	None
Jurisdictions where passthrough coefficient is statistically indistinguishable from zero at a 95% confidence level		
Austria	115%	None
Australia: Optus	75%	None
Luxembourg	0%	None
Japan	-549%	None
Sweden	109%	None
Country with statistically significant negative intercept		
Germany	210%	None

Exhibit 1.1: FTM passthrough levels for business customers [Source: Vodafone]

<i>Country</i>	<i>Passthrough level (residential)</i>	<i>Regulatory environment for FTM</i>
Switzerland	113%	None
Greece	105%	Regulated FTM mark-up
Factual forecast	92%	
Portugal	88%	Regulated FTM mark-up
Netherlands	85%	Regulated FTM mark-up
Spain	74%	FTM regulated as part of price cap
UK BT	60%	FTM regulated as part of price cap
Ireland	58%	FTM regulated as part of price cap
France	47%	Regulated FTM mark-up
Australia:		
Telstra	43%	None
Belgium	41%	Regulated FTM mark-up
NZ historical	30%	
Denmark	14%	None
Norway	12%	None
UK ntl	2%	None
Australia: Optus	-28%	None
Jurisdictions where passthrough coefficient is statistically indistinguishable from zero at a 95% confidence level		
Luxembourg	0%	None
Japan	-882%	None
Sweden	0%	None
Jurisdictions with statistically significant negative intercept		
Germany	210%	None
Austria	168%	None

Exhibit 1.2: FTM passthrough levels for residential customers [Source: Vodafone]

Although this paper was commissioned by TelstraClear the views expressed here are entirely those of Network Strategies. There is no restricted information contained within this report – all data presented is publicly available. Consequently there is no restricted version of the report.

2 Mobile termination rates

2.1 Basis of MTRs in Vodafone sample during the period analysed (2002–2005)

The Vodafone sample consists predominantly of jurisdictions that did not have forward-looking cost-based MTRs during the period of analysis (2002 to 2005). In the cases of Austria, Sweden and the UK there were changes in the basis of MTRs during the period (for example, Sweden introduced partial FL-LRIC based rates in mid 2004 and Austria introduced full FL-LRIC in September 2003). The timing of these changes in regulation is important. We would not expect the benefits of moving MTRs closer to cost to be immediate – it would take a period of time for price adjustments to occur via competitive forces. Thus if the analysis reflects an average passthrough level for the period, this will not capture the competition and retail market benefits of moving towards forward-looking cost-based rates later in the period.

<i>Country</i>	<i>Forward-looking cost-based (FLCB) MTR?</i>
Australia ³	No. In the current regime, implemented on 1 July 2004, MTRs are subject to a glide path which was designed to bring the MTRs in line with an MTR based on results of cost-modelling in other jurisdictions and data from Australian MNOs. However, there are a number of access disputes pending which impact on the implementation of the recommended MTR reductions. MTRs were commercially negotiated prior to 1 July 2004, but subject to regulatory control in the event of ACCC arbitration.
Austria ⁴	Yes, FL-LRAIC from September 2003. Until this date MTRs were based on a combination of: <ul style="list-style-type: none"> • international best practice • national benchmarking • retail minus • the size of the MNO and its market share.
Belgium ⁵	No. MTRs are cost-orientated but not forward looking.
Denmark ⁶	No. MTR based on benchmarking of MTRs in Finland, Norway and Sweden – jurisdictions that have not implemented FLCB MTRs.
France ⁷	No. The current MTRs have been determined by applying year-on-year percentage discounts to historical cost-based MTRs and not by a current cost model.
Germany ⁸	No. MTRs are currently commercially negotiated.
Greece	Network Strategies is waiting for a response from the Greek regulator
Ireland ⁹	No. MTRs are currently commercially negotiated but subject to a cap.
Italy ¹⁰	No. The current MTRs have been determined by applying year-on-year percentage discounts to historical cost-based MTRs and not by a current cost model.

Exhibit 2.1: *Cost orientation of MTRs in Vodafone's regression sample [Source: European Commission, OECD, Regulators]*

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- ³ ACCC (2006). *Optus's undertaking with respect to the supply of its Domestic GSM Terminating Access Service (DGAS): Final Decision*. February 2006.
- ⁴ RTR (2001). *Communications report 2001*.
RTR (2003). *Communications report 2003*.
- ⁵ BIPT (2006). *Consultation publique sur le marché de la terminaison mobile*. 7 February 2006.
- ⁶ European Commission (2006). *Annex to the European electronic communications regulation and markets 2005 (11th Report): Volume I*. 20 February 2006.
- ⁷ ART (2004). *Annual Report 2004*.
- ⁸ European Commission (2006). *Annex to the European electronic communications regulation and markets 2005 (11th Report): Volume I*. 20 February 2006.
- ⁹ ComReg (2006). *Reductions in mobile termination charges by Vodafone, O2 and Meteor will benefit consumers*. 16 January 2006.
- ¹⁰ AGCOM (2003). *Decision 47/03/CONS*. 5 February 2003.

Country	Forward-looking cost-based (FLCB) MTR?
Japan ¹¹	No - we do not believe that the condition that MTRs not exceed 'the sum of reasonable costs and reasonable profit under efficient management' complies with FLCB.
Luxembourg ¹²	No. MTRs are commercially negotiated but are subject to a glide path which was designed to bring the MTRs in line with a rate determined by international benchmarking. Network Strategies has been unable to find details of the benchmarking methodology.
Netherlands ¹³	No. MTRs are commercially negotiated and subject to the agreement of the regulator.
Norway ¹⁴	No. MTRs are based on fully allocated historical costs.
NZ	No
Portugal ¹⁵	No. MTRs are commercially negotiated but are subject to a glide path which was designed to bring the MTRs in line with the rest of the EU.
Spain ¹⁶	No. Prices are commercially negotiated.
Sweden ¹⁷	Partial FL-LRIC (25% FL-LRIC, 75% FDC using historical cost accounting) MTRs implemented in July 2004. Formerly 100% FDC HCA. Currently 50:50 FL-LRIC:FDC using HCA, implemented 1 July 2005.
Switzerland ¹⁸	No
UK ¹⁹	Yes. LRIC+ from September 2004. FAC from 2000 up to this date, subject to RPI-9% cap.

Exhibit 2.1 (cont.) Cost orientation of MTRs in Vodafone's regression sample [Source: European Commission, OECD, Regulators]

- ¹¹ Ministry of Public Management, Home Affairs, Posts and Telecommunications (2003). *Telecommunications Business Law. Article 34(3)(iv)*. 24 July 2003.
- ¹² ILR (2005). *Projet de Décision de l'Institut Luxembourgeois de Régulation concernant le marché de gros de la terminaison d'appel vocal (marché 16)*. 16 December 2005.
- ¹³ OPTA (2005). *Annual report 2004 and vision 2005*. 19 May 2005.
- ¹⁴ NPT (2005). *Decisions for designating undertakings with significant market power and imposing specific obligations in the markets for voice call termination on individual mobile networks (market 16)*. 19 September 2005.
- ¹⁵ ANACOM (2005). *2004 Regulation report: situation of communications in Portugal*. July 2005.
- ¹⁶ CMT (2006). *La CMT fija las condiciones del mercado de terminación móvil*. 23 February 2006.
- ¹⁷ PTS (2004). *LRIC prismetod för terminering av röstsamtal i mobilnät*. 5 July 2004.
- ¹⁸ BAKOM (2006). Email from regulator. 2 March 2006.
- ¹⁹ Ofcom (2003). *Review of mobile wholesale voice call termination markets: EU Market Review*. 15 May 2003.
- Ofcom (2004). *Wholesale Mobile Voice Call Termination*. 1 June 2004.

Network Strategies' review of the regulatory regimes in the 19 jurisdictions Vodafone includes in its regression model indicates that:

- Only Austria, Sweden and the UK have determined FLCB MTRs. Note that these are the only jurisdictions in Vodafone's sample that are also included in the Commission's MTR cost estimate benchmarking, other than Australia where the regulated reductions are yet to be fully implemented.
- While the MTRs in force in Austria and the UK are FLCB that of Sweden is not fully forward-looking.

3 Vodafone's methodology: a critique

3.1 Initial model hypothesis

Vodafone estimates the passthrough levels by use of a regression model for each country:

$$\text{Retail rate} = a + \beta \times \text{MTR} + \text{error}$$

where β is the average passthrough level, and a is the remaining price component.

To estimate the parameters for this model, Vodafone claims to use data collected half-yearly over the four-year period 2002–2005. However it is likely that during this time period there have been significant changes in the regulatory regime for both MTRs and retail fixed-to-mobile. This means that the data points cover a period in which the tariff policy (and thus the passthrough level) is likely to have undergone radical changes. Hence the passthrough level of 2005 is influenced by quite different factors than it would have been in 2002.

In such a situation, it would therefore be expected that the 2005 regulatory situation would continue (subject to any future changes), and therefore an average passthrough level calculated over the period 2002–2005 would be misleading.

In fact, Vodafone's β parameter will not be constant – it will be influenced by the regulatory regime (for fixed-to-mobile tariffs), changes in the level of competition, and various other commercial decisions by the operator (to address issues such as the decline in traffic due to fixed-mobile substitution).

3.2 Calculation of retail per-minute rates

Vodafone has calculated retail fixed-to-mobile per minute rates using Teligen/OECD residential and business basket prices. Examination of the source data²⁰ indicates that it:

- reports the price (in USD) of baskets of 120 and 360 residential and business fixed-to-mobile calls respectively, each call of two minutes duration
- is valid as of the first day of February, May, August and November for each year except for 2002 where only data as of the first day of August and November is presented.

Vodafone converted basket prices back to the local currency (we assume that the Teligen/OECD currency conversion rates were used, although this is not stated), then determined per-minute rates using the call profiles of the two baskets. The results were then verified with local Vodafone operating companies, and in cases of disagreement, were replaced with Vodafone data – no information on the nature or level of disagreement was provided by Vodafone.

Network Strategies believes that the use of a standard basket of calls is highly inappropriate in this instance. This type of methodology is designed to compare the relative prices (or affordability) of services between jurisdictions. In other words, to answer the question: how much would it cost a subscriber to purchase identical goods and services in each country?

However, the type of analysis undertaken here is quite different. Vodafone is attempting to determine how a retail price may be affected by changes in the underlying costs. In very general terms, operators set tariffs by determining the unit cost of the service and then adding some target margin²¹. The operator may also seek to implement price differentiation through peak/off-peak charging – the underlying cost of the call does not differ, but the operator is attempting to encourage usage when there is network capacity.

²⁰ *Passthru Data.xls*, supplied to TelstraClear by Hayden Glass of Vodafone on February 24 2006.

²¹ The margin will be determined by a combination of business targets and any regulatory constraints that may apply to the service.

So that if a different call profile is being used to calculate a per-minute retail price, then this may not necessarily provide an accurate reflection of the unit cost of the service. In particular, the mix of peak/off-peak traffic may differ between operators, and so the average price based on some standard call profile, may be quite different to the average price based on the actual calling behaviour (that is, the price which is equivalent to cost plus margin).

For any jurisdictions in which the calling behaviour is different to that of the standard call profile, an additional error in the estimates would be introduced. The significance of this error would depend on the level of variation between call profiles. Without knowledge of the local call profiles, it would be difficult to determine whether this issue would result in a material difference to the estimates.

For the purposes of this analysis, it would probably be preferable to use simply the peak fixed-to-mobile charges as the introduction of calling behaviour adds unnecessary complexity to the resultant data points, resulting in per-minute price estimates that diverge from the underlying cost plus target margin approach for tariff setting.

Notwithstanding Vodafone's mis-usage of the Teligen/OECD data, Network Strategies notes that in the Teligen/OECD data presented by Vodafone a number of residential services are included listed as business. Examples include the Czech Republic, Iceland, Slovakia and the UK (ntl). While the three former jurisdictions are not included in the regression analysis this raises concerns with respect to the validity of the Teligen/OECD data.

Network Strategies notes that jurisdictions with very high FTM prices may have greater scope for price reductions than jurisdictions with average or lower FTM prices. Given that New Zealand's MTRs are significantly above cost estimates and its FTM prices²² are amongst the highest in the OECD there could be scope for an above average level of passthrough.

²² New Zealand Ministry of Economic Development (2005). *Benchmarking the comparative performance of New Zealand's telecommunications regime*. 20 December 2005.

3.3 Calculation of MTRs

Network Strategies contends that the methodology Vodafone used to calculate the MTRs is not clear. It is important to note that some MTRs have per call as well as per minute components. In these cases average per minute MTRs will be very sensitive to the assumed call duration.

Regarding Vodafone's application of the MTRs, the MTRs are valid as of the first day of April and October of each year. Therefore the retail prices and MTRs do not correspond to the same dates.

3.4 Are the estimates meaningful?

The estimates from Vodafone's model give passthrough levels of over 100% for several of the sample jurisdictions:

- business: UK, Switzerland and Greece
- residential: Switzerland and Greece.

What does a passthrough level of over 100% mean in the context of Vodafone's model? It suggests that there has been a reduction in price greater than the reduction in the MTR. A passthrough level of over 100% could indicate that MTR reductions have resulted in increased competition. However, there are also likely to be other factors – in addition to the passthrough level – that are causing changes in the fixed-to-mobile rate, meaning that Vodafone's model is actually estimating the combined average effect of all these factors (including the passthrough level).

The failure to account for the other factors which influence the fixed-to-mobile rate is a serious flaw in the model hypothesis. As such Vodafone's estimates cannot be considered to be purely the average passthrough level.

3.5 Omission of sample data

Vodafone omitted both Germany and Austria from its analysis, as data for these jurisdictions resulted in a negative intercept – in other words, a negative retail price if the mobile termination rate was zero.

This suggests one or both of the following:

- there are additional significant factors that influence the relationship between the MTR and the retail fixed-to-mobile rate and which are not identified within the model structure
- there may be problems with the underlying data.

3.6 Summary

Network Strategies recommends that the Commission rejects the results of Vodafone's analysis of passthrough levels because the analysis is invalidated by:

- a flawed hypothesis
- inappropriate usage of Teligen/OECD call basket data
- inclusion of jurisdictions which do not have forward-looking cost-based MTRs
- omission of sample data.

4 Conclusions

We have examined Vodafone's assessment of passthrough levels and have found that:

- Of the jurisdictions included in Vodafone's sample only Austria and the UK have implemented FLCB MTRs, and in Sweden the MTR is 50:50 forward-looking cost:historical cost based. Therefore, the average passthrough levels presented by Vodafone cannot accurately inform us as to the likely passthrough level when MTRs are brought closer to cost and the resultant increase in retail FTM competition.
- Vodafone's analysis assumes average rates of passthrough over a 4 year period. In fact, we would expect passthrough levels to be increasing to the extent that MTRs are moving closer to cost over the period. Therefore, the analysis most likely underestimates the level of passthrough.
- Network Strategies notes that jurisdictions with very high FTM prices may have greater scope for price reductions than jurisdictions with average or lower FTM prices. Given that New Zealand's MTRs are significantly above cost estimates and FTM prices here are amongst the highest in the OECD, there could be scope for an above average level of passthrough.