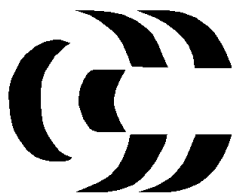


**TELECOMMUNICATIONS ACT 2001:
SCHEDULE 3 INVESTIGATION INTO
REGULATION OF MOBILE TERMINATION**

Issues Paper

8 August 2008



COMMERCE COMMISSION

TABLE OF CONTENTS

1.	INTRODUCTION AND PROCESS.....	3
2.	SUMMARY OF SUBMISSIONS.....	5
3.	MARKET FOR MOBILE TERMINATION	7
4.	TERMINATION AS AN INTERCONNECTION BOTTLENECK	10
5.	TELECOMMUNICATION MARKET OVERVIEW.....	12
6.	WELFARE ANALYSIS	25
7.	PRELIMINARY VIEWS	29
8.	CONSOLIDATED LIST OF QUESTIONS FOR CONSULTATION.....	30

1. Introduction and process

Background

1. The Commerce Commission (“the Commission”) has a range of responsibilities under the Telecommunications Act 2001 (“the Act”). Under Schedule 3 of the Act the Commission may, on its own initiative, commence an investigation into whether or not a telecommunications service should be regulated by making it a designated or specified service. Under the Act the Commission may commence an investigation only if it is satisfied there are reasonable grounds for such an investigation.
2. The Commission in its 2007 Telecommunications Market Monitoring Report noted that there is a significant differential between the retail rates charged for mobile on-net and off-net calls. The Commission concluded that such rates are likely to be sustainable only if wholesale mobile-to-mobile termination rates between networks are significantly above cost. The Commission also noted that high mobile-to-mobile termination rates are a particular concern for new entrants to the mobile market, as such rates may make it difficult for new entrants to attract customers from existing networks which offer low on-net rates.¹
3. The 2007 Monitoring Report also presented some evidence indicating that mobile-to-mobile termination rates for both voice and SMS are significantly above cost.
4. On 8 May 2008 the Commission gave notice that it was considering commencing an investigation into whether or not to subject mobile-to-mobile termination rates for both voice and SMS to regulation and sought the views of interested parties.²
5. On 14 May, the Commission wrote to interested parties extending the timeframe for responses to 29 May 2008. The Commission also stated that if, following the receipt of initial views from interested parties, there appears to be reasonable grounds to commence an investigation, the Commission proposes to test the issue further by releasing an Issues Paper and seeking submissions before commencing a formal Schedule 3 investigation.³
6. The Commission received submissions from interested parties and these are briefly summarised in Section 2 of this paper.
7. The Commission now considers that there appears to be reasonable grounds to commence an investigation into mobile termination, so is testing the issue further by releasing this Issues Paper and calling for submissions.
8. In previous Schedule 3 investigations, the Commission has released an Issues Paper after the commencement of an investigation, outlining what the Commission considers to be

¹ Commerce Commission, 2007 Telecommunications Market Monitoring Report, 31 March 2008, p 24

² Letter from Patterson (Commission) to interested parties, 8 May 2007

³ Letter from Borthwick (Commission) to interested parties, 14 May 2007

the issues and seeking comment from interested parties. The Commission considers that soliciting comments on an Issues Paper at an earlier stage will meet the purposes set out in paragraph 11 and will assist any party proposing to lodge an undertaking.

9. This Issues Paper focuses particularly on the market for mobile termination. However, for a complete competition analysis, adjacent upstream and downstream markets which may have an impact on the competitive outcome (such as the Fixed-to-Mobile market) have to be taken into account, in order to avoid asymmetric outcomes providing arbitrage potential.
10. Section 3 explains how the market for call termination is defined and examines related issues. Section 4 focuses on the question of why termination is recognised as a bottleneck service and what potential competition issues may arise. Section 5 gives an overview of the telecommunications market in New Zealand, with a particular focus on the market structure and conduct as well as the performance in the wholesale and retail mobile sector. Section 6 indicates what other factors the Commission considers relevant in further investigating termination markets in New Zealand. The observations in this Issues Paper are summarised in section 7 in the draft conclusions.

Commission process and timetable

11. The Issues Paper is part of the consultation process with interested parties to determine whether or not to launch a Schedule 3 investigation. The Commission is seeking responses on the questions in this paper, although respondents should not feel constrained by the questions and should feel free to submit on related issues. The consultation questions are summarised at the end of the Paper. The closing date for written submissions is 5 September 2008.

Public availability of submissions

12. To promote an open and transparent process, the Commission intends to publish as many submissions as possible on its website. Accordingly, the Commission requests that all submissions are provided in electronic form.

Contact details

13. Please contact Anthony Morris on 04 4795 804 or anthony.morris@comcom.govt.nz should you have any questions regarding the process. Please forward all electronic versions of submissions to telco@comcom.govt.nz.

2. Summary of Submissions

Vodafone

14. Vodafone takes the position that the level of mobile-to-mobile termination rates is not important because traffic flows are roughly symmetric between mobile networks or, in the case of a new entrant, are likely to be asymmetric in the short term only.
15. Given the likelihood of traffic being in balance, Vodafone considers setting termination rates through regulation would be unlikely to result in an increase in consumer welfare.
16. Vodafone also asserts that on-net pricing is a feature of many competitive markets and there is not a strong link between the use of on-net pricing by competitors and the ability of new entrants to gain market share.

Telecom

17. Telecom considers that the commercial offers in place already deliver valuable certainty to industry participants and end-users.
18. In relation to SMS termination, Telecom asserts that text usage in New Zealand is extremely high by international standards which indicates there is not a problem with underlying termination rates.

NZ Communications

19. NZ Communications considers that currently there is not effective competition in the New Zealand mobile communications market so it is in the long-term interests of end-users that there is new entry into this market.
20. NZ Communications asserted that mobile-to-mobile termination rates are significantly above cost and present major barriers to entry for new entrants. NZ Communications considers these high termination rates enable behaviour detrimental to competition such as closed network pricing, bundling, pocket pricing and on-net fixed price calling plans.

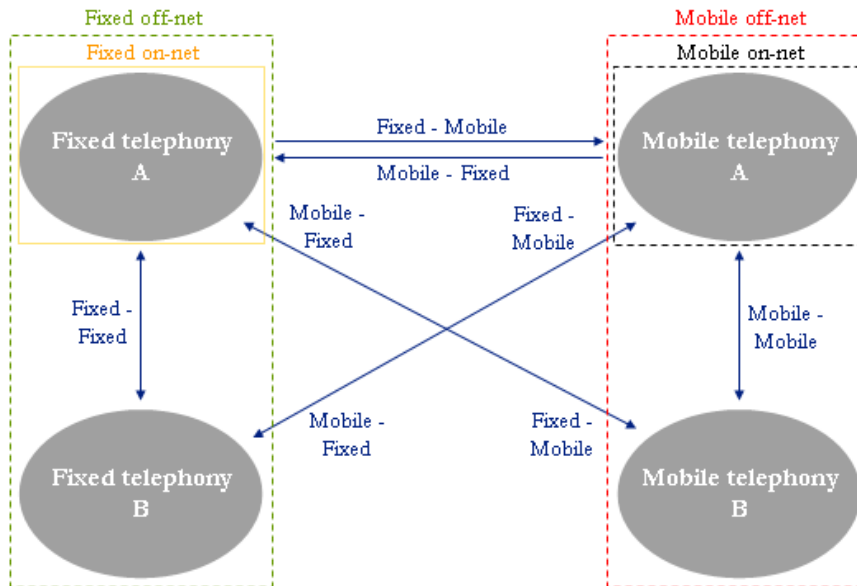
Other Submissions

21. WorldxChange, CallPlus and Orcon all made submissions supporting an investigation, and advocated widening it to include termination of all mobile calls, including those originated on the fixed network.
22. Bundled retail offers from Vodafone and Telecom that include fixed-to-mobile calling at prices less than the wholesale termination rate were a concern raised by CallPlus and Orcon to support regulation of termination rates for fixed-to-mobile calls.

23. The increasing prevalence of on-net pricing in the mobile market and the barrier to entry this caused was mentioned by CallPlus and Orcon. CallPlus further asserted that on-net mobile-to-mobile calling being cheaper than fixed-to-mobile calling was driving substitution.
24. TUANZ also made a submission supporting an investigation.

3. Market for mobile termination

25. There are generally a number of suppliers in the (fixed and mobile) telephony market who have their own network facilities⁴. The traffic flow between these suppliers is a substantial driver for being successful in the respective market. Therefore it is likely that there are incentives for operators to set prices in a way to maximise their overall revenues. The following figure shows the traffic flow between different telecommunication networks:



26. Termination generally is defined as the last element of routing a specified call from the originating customer to the terminating customer. Under a Calling Party Pays (“CPP”) model (as is the case in New Zealand), service providers sell telephony and data services in the retail mobile market which includes a range of subscription services and the ability to make outgoing calls. The termination service is not part of this retail offering to subscribers, as subscribers do not pay to receive incoming calls/SMS. The mobile terminating access service is a wholesale input supplied in the wholesale market to those network operators who wish to supply their subscribers with the ability to make retail mobile-to-mobile or fixed-to-mobile calls/SMS to its subscribers. As termination services are an essential input for providing end-to-end services, termination is recognised to be a bottleneck resource.
27. The Commission usually seeks to define relevant markets in terms of the following characteristics or dimensions:

- The goods or services supplied or purchased (the product dimension);

⁴ Some operators base on a business model where they do not have – or only to a limited extent – their own network facilities and rent them instead.

- The geographic area from which the good or services are obtained, or within which the goods or services are supplied (the geographical dimension);
 - The level in the production or distribution chain (the functional dimension); and
 - The timeframe of the market, if relevant (the temporal dimension).
28. The Commission has previously considered the extent to which other services may represent a substitute⁵, especially for mobile services and wholesale mobile termination. The Commission has found that there is likely to be a separate market for mobile voice termination services⁶.
29. Overseas regulators have examined the extent to which termination services on competing mobile networks may be substitutable for one another⁷. As a result of the ‘calling party (network) pays’⁸ feature of telecommunications, substitutability between different termination services is typically considered to be low or non-existent.
30. Relevant markets for terminating services are generally defined as *voice call termination on an individual (fixed or mobile) network*. This definition is consistent with that applied in other jurisdictions, particularly those countries in the European Union⁹. Within *mobile termination services* the EU divides markets into the *national wholesale markets for mobile termination services on each mobile network* (the “wholesale mobile termination market”) and the *national retail market for mobile subscription and origination services* (the “retail mobile service market”). Currently the European Commission is concerned about the relative tariffs between mobile-to-mobile and fixed-to-mobile termination rates¹⁰.
31. The *Commission* considers that the relevant market is the market for **mobile termination services**. It is necessary to consider the relationships between fixed-to-mobile and mobile-to-mobile termination markets to avoid any arbitrage potential between related services where some are subject to regulation and some are not. The potential for arbitrage and external effects should be minimised to ensure no artificial and inefficient distortionary impacts are created.

Question 3.1

(a) Is the market definition as outlined above (market for mobile termination

⁵ See for example

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/ContentFiles/Documents/MT%20Report%20PUBLIC%20version1.pdf>

⁶ Commerce Commission: Schedule 3 Investigation into regulation of mobile termination, 2004

⁷ See for example: <http://www.ofcom.org.uk/consult/condocs/wholesale/wholesale.pdf>

⁸ CPP or CPNP

⁹ Examples are: Belgium (Décision du Conseil de l’Institut belge des services postaux et des télécommunications du 11 août 2006,

www.ibpt.be/ibpt.htm), Germany (Regulierungsverfügungen der Bundesnetzagentur vom 30. August 2006,

www.bundesnetzagentur.de/media/archive/7271.pdf), France (Décision n° 06-0779 de l’Autorité de régulation des communications électroniques

et des postes en date du 14 septembre 2006, www.arcep.fr/uploads/tx_gsavis/06-0779.pdf), Italy (Autorità per le Garanzie nelle Comunicazioni,

Delibera n. 3/06/CONS del 12 gennaio 2006,

www.agcom.it/provv/d_03_06_CONS/d_03_06_CONS.htm)

¹⁰ (European) Commission recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU

services) appropriate? If not, what is the appropriate definition/delineation?

(b) Are there other markets that respondents consider the Commission should be taking into account?

4. Termination as an interconnection bottleneck

32. The key elements required to provide voice¹¹ retail services are *network access*, *call origination*, *call conveyance* and – in case of off-net voice calls - *call termination on other networks*. Network access and call origination are typically supplied together by a network operator so that both services can be considered part of the same market. The same elements are used to provide data services (e.g. SMS).
33. Call and data *termination* is by definition a service necessary for the calling party to reach an end-user on a (mobile or fixed) network. Under the CPP principle, terminating operators recover the cost of terminating calls that originated from other networks through a *per minute/second* charge paid by the originating network. The end-user receiving the call does not pay the cost of terminating the call.
34. The *demand* for call termination is unlikely to be substitutable with other services, from either an end-user or a wholesale network operator’s perspective, because each provider of call termination has exclusive control of the access to end-users on its own network. Call termination is an essential bottleneck for the user making a phone call and for the provider offering the service.
35. Market *power* in call termination can lead to various competition problems, including:
- **Prices above costs:** A telecommunication provider with significant market power (“SMP”) in termination services could charge wholesale prices above costs. In such a situation, market entrants face high barriers of entry. To the extent that there is market power in the upstream wholesale termination market, and the provider charges prices in excess of costs, this is likely to affect the downstream retail markets, as termination services represent a substantial share of the total retail price. Any benefits to consumers from regulation at the wholesale level are likely to emerge in the downstream retail market.
 - **Strategic price discrimination**¹²: There are a number of reasons why price discrimination may be of concern.

The particular concern for the telecommunications market is that a firm with SMP may exploit final customers by means of price discrimination, with the result that total and/or consumer welfare are reduced.

A second important competition issue arises in that price discrimination can be used to “exclude” (or weaken) actual or potential rivals. A provider with SMP in the mobile market could choose to give substantial discounts on on-net calls relative to off-net calls. This pricing behaviour is often called “closed network” pricing, and is likely to be a disincentive to entry, and reduces a new entrant’s ability to acquire customers.

¹¹ For simplicity only voice services are mentioned although the problem does occur also with data services

¹² Generally price discrimination exists when two “similar” products that have the same marginal cost to produce are sold by a firm at different prices.

A further example of strategic pricing behaviour is “pocket pricing”, where prices are differentiated between customer groups either geographically or by segment. A potential effect of such strategic price setting is that entry for competitors is discouraged.

The Commission believes that differentiation between on-net and off-net pricing is not an issue in itself: where such differentiation reflects different costs, it may be a legitimate commercial strategy. However, the Commission considers that closed network pricing can be a barrier to entry where termination rates are systematically above costs.

- **Refusal of access:** A telecommunications provider with substantial market power could refuse access to call termination on its own network, which enables it to transfer its market power to the (retail) markets for (fixed and mobile) telephony as well as the (wholesale) market for call transit.

36. Bundling cases are becoming an increasing concern for competition authorities¹³. The application of pricing strategies such as on- and off-net pricing and pass-through differentials to certain customer groups (business or retail customers) become increasingly important for the evaluation and the analysis conducted by the Commission in predatory pricing investigations on telecommunication bundles.

Question 4.1

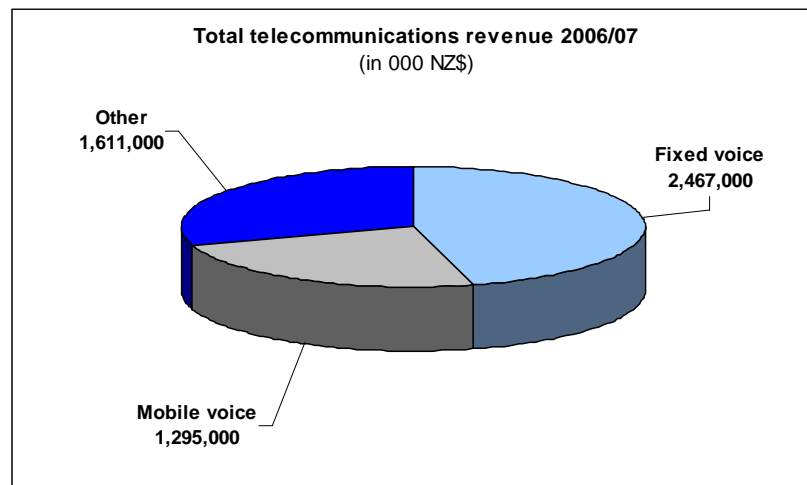
- (a) **Is the approach that termination is likely to be a bottleneck appropriate (arguments have to take into account both retail and wholesale markets)?**
- (b) **What additional effects (e.g. on other markets) can arise if considering mobile termination services as an essential bottleneck?**
- (c) **What factors can potentially lead to on-/off-net call discounts? Under what circumstances do discounts lead to predatory price discrimination?**

¹³ E.g. <http://www.comcom.govt.nz/BusinessCompetition/Anti-competitivePractices/commissionclosesinvestigationintot.aspx>

5. Telecommunication market overview

Total value of the New Zealand telecommunication market

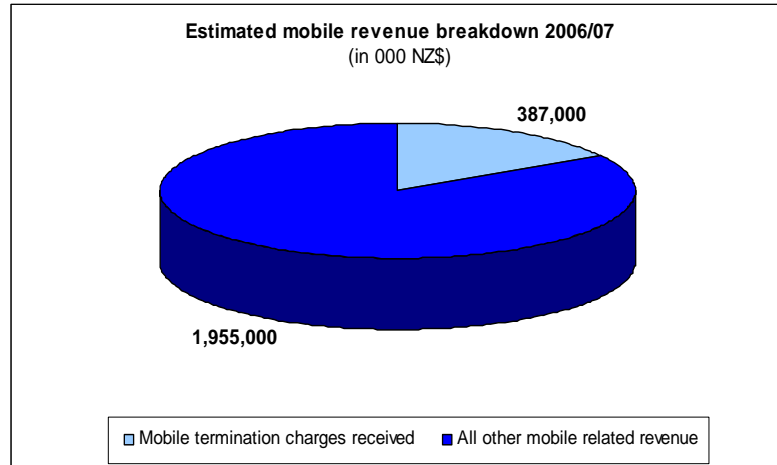
37. The total revenues of the telecommunication retailers in New Zealand are estimated to be approximately \$5.4 billion per year, or around 4% of the GDP¹⁴. Of these revenues, 62% are derived from the supply of voice calling services, and 38% from the supply “Other” services, which include services such as broadband/IP or data (e.g. services for business customers or SMS). The 62% voice revenues comprise 38% from fixed-line voice services and 24% from mobile voice services¹⁵.



38. The total revenue from the mobile market (voice, data and others) is estimated to be around \$2.3 billion per year. \$1.3 billion is estimated to be obtained from the supply of (retail and wholesale) voice services, of which voice termination revenues is estimated to account for \$387 million, or 17% of the total mobile market revenues.

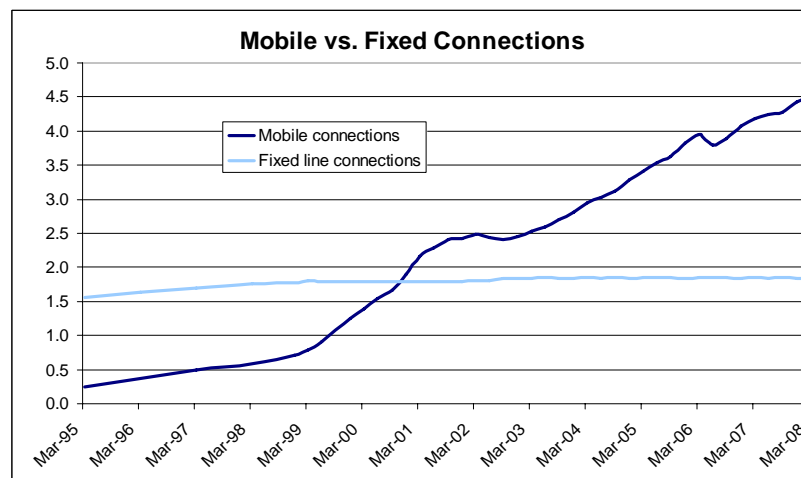
¹⁴ Real GDP according Statistics NZ and Reserve Bank of NZ December 2007: \$133.9 billion

¹⁵ Source: Yearly dataset from industry players



Market Share

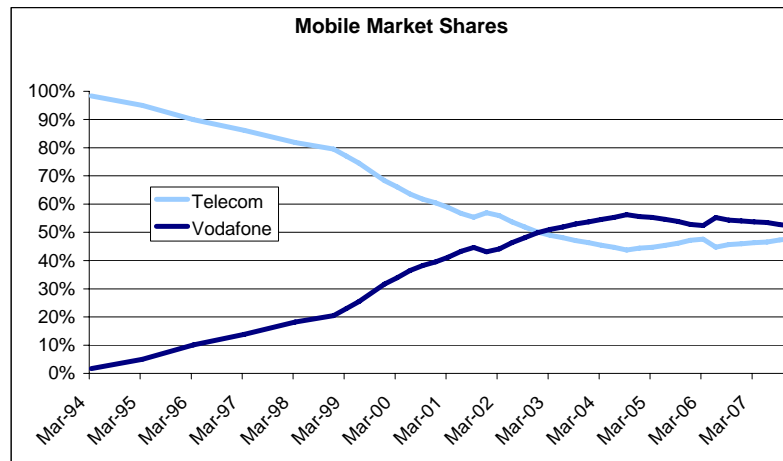
39. Market share is one important criterion in determining the degree of market power. In relation to *mobile call termination on each mobile network*, each network operator by definition supplies 100% of its termination market and therefore controls access to its end-users. Every other operator who wants to reach those end-users is dependent on the respective mobile supplier.
40. There are 1.85 million fixed-line connections and approximately 4.5 million mobile subscribers¹⁶ in New Zealand¹⁷. The number of mobile connections overtook the number of fixed-line connections in 2001.



41. There are two main operators¹⁸ in the New Zealand mobile market: Telecom and Vodafone. At the end of 2007 the market share of Telecom was estimated to be 47.7% (2.1 million subscribers) and 52.3% (2.4 million subscribers) for Vodafone.

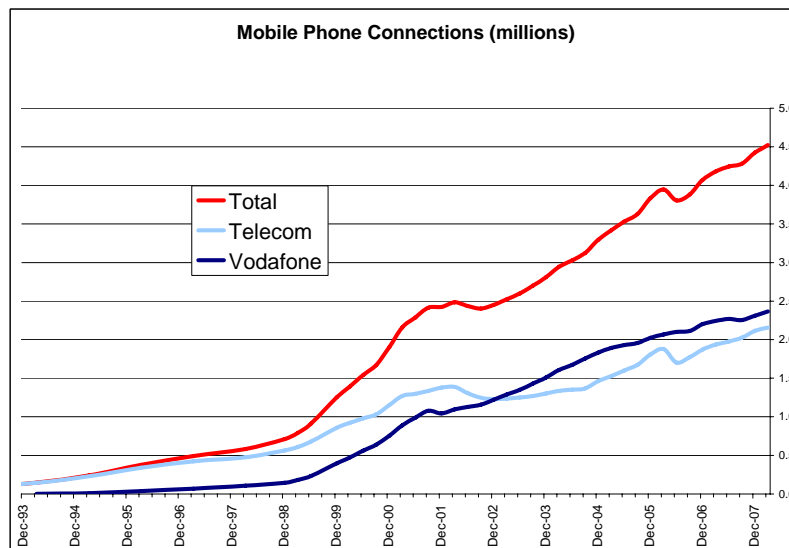
¹⁶ Measured in number of SIM (subscriber identity module) cards

¹⁷ Source: Yearly dataset from industry players



Market penetration

42. Market penetration measures the number of mobile subscribers as a percentage of the population. The market penetration in New Zealand for mobile phones was approximately 106%¹⁹ in June 2008.
43. As at 31 December 2007 mobile penetration for selected European countries is estimated to be 111% in Norway²⁰, 118% in Germany, 122% in UK and Spain and 153% in Italy²¹.



¹⁸ There are some minor operators offering retail mobile services in niche markets. Typically these providers are MVNO (mobile virtual network operators) without having the entire infrastructure necessary to provide mobile telephony services. However, due to the marginal share the focus is on Telecom and Vodafone which are the major players.

¹⁹ New Zealand population July 2008 : 4.268 million (Source: <http://www.stats.govt.nz>); Total mobile contracts March 2008: 4.522 million

²⁰ http://www.npt.no/iKnowBase/Content/104593/The_Norwegian_Ecom_Market_1h2007_eng.pdf

²¹ Estimations made by Vodafone (http://www.vodafone.com/start/investor_relations/financial_reports/annual_reports.html)

Concentration

44. Market concentration can be a useful indicator of the degree of competition in a market. Some models of market interaction (e.g. Cournot oligopoly or Bertrand oligopoly for differentiated products) predict that an increase in market concentration will result in higher prices and lower benefits to consumers.
45. As explained earlier, there are two major mobile operators in New Zealand with the respective market shares of 47.7% and 52.3%. Comparing these figures with the international benchmark published by the OECD in 2007²² shows that New Zealand and Slovakia were the only countries among 30 member countries with two mobile network operators. The other 28 jurisdictions have three or more competing mobile network operators²³.
46. Benchmarking the market shares in New Zealand against jurisdictions that are "close" or comparable²⁴ to New Zealand supports this finding. That is, there are two mobile operators in the New Zealand market, whereas comparable countries tend to have four or more operators competing for the customers.

Number of Operators	Market share of operator				
	1	2	3	4	5
New Zealand	52.3	47.7			
Sweden	52	27.9	17	3.1	
Finland	65.74	4.3	18.5	11.5	
Norway	59.5	24.4	8	6.3	1.8

Mobile voice call volume

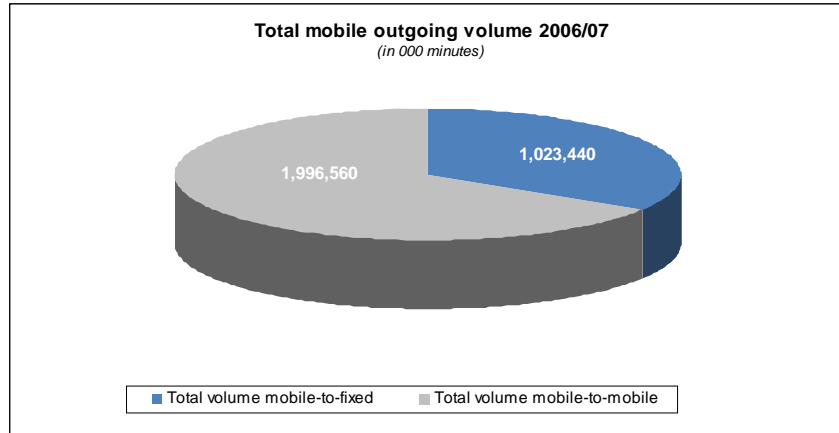
47. Data available from external reports estimates that over all customers (business and residential) in the 2006/07 period, the total volume of mobile outgoing calls²⁵ in New Zealand was around 3 billion minutes.

²² OECD Communications Outlook 2007

²³ A summary of the findings can be found in the Final Report for the investigation into Amending the Roaming Services from 10th March 2008 (<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/ContentFiles/Documents/Roaming%20Final%20Report.pdf>)

²⁴ With regards to "Comparability" the Commission has used the same criteria that were used in the UCLL STD. For the UCLL benchmarking exercise the Commission was looking at cost drivers relevant to the UCLL Service, such as population density, urbanisation or teledensity. The parameters were calibrated to the following values: **Population density**: NZ: 15 → Range: 0-30; **Urbanisation**: NZ: 86% → Range: 60%-100%; **Teledensity**: NZ: 43% → Range: 20%-60%. The Commission considers that these factors are also likely to influence the costs of building and operating a mobile network.

²⁵ Excluding outgoing international calls



48. Comparing the mobile minutes per subscriber and year²⁶ indicates that customers in New Zealand “consume” a much lower amount of outgoing²⁷ mobile call minutes than their international peers. One possible explanation is that the low volume per subscriber is caused by relatively high calling prices.

	New Zealand	Australia	Germany	Sweden	Norway	UK	Finland
Mobile voice volume (in 000 min)	3,020,000	19,107,000	68,337,000	12,293,000	4,558,000	82,000,000	6,859,000
Subscribers (in 000)	4,522	21,300	97,151	9,811	5,211	69,700	6,080
Minutes per subscriber	668	897	703	1253	875	1176	1128

49. Approximately 75% of Vodafone's subscribers are registered as being prepaid customers whereas Telecom has approximately 60% registered prepaid subscribers. The share of prepaid customers in jurisdictions from overseas varies from 10% (Finland) to 90% (Italy). Comparable²⁸ countries such as Sweden and Finland have 20% and 10% prepaid subscribers respectively.

Call spending and Average Return per Minute

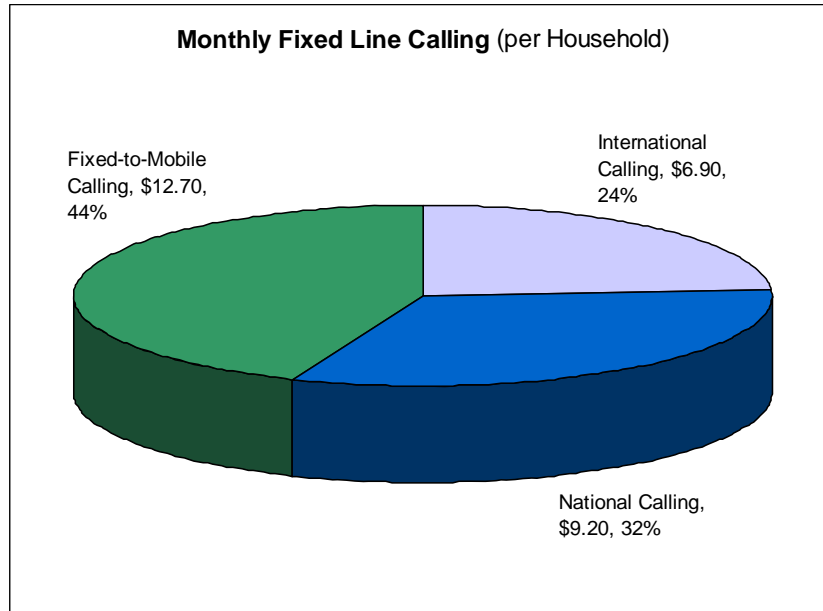
50. Statistics New Zealand published the Household Economic Survey in June 2007²⁹. Data available from the survey shows that average household spending on voice calls in New Zealand was \$28.80 per month, and the Commission estimates costs for fixed-to-mobile calling represent the biggest share (44%) at \$12.70 per month.

²⁶ Numbers have been taken from the most actual regulatory reports available online

²⁷ Off-net calls

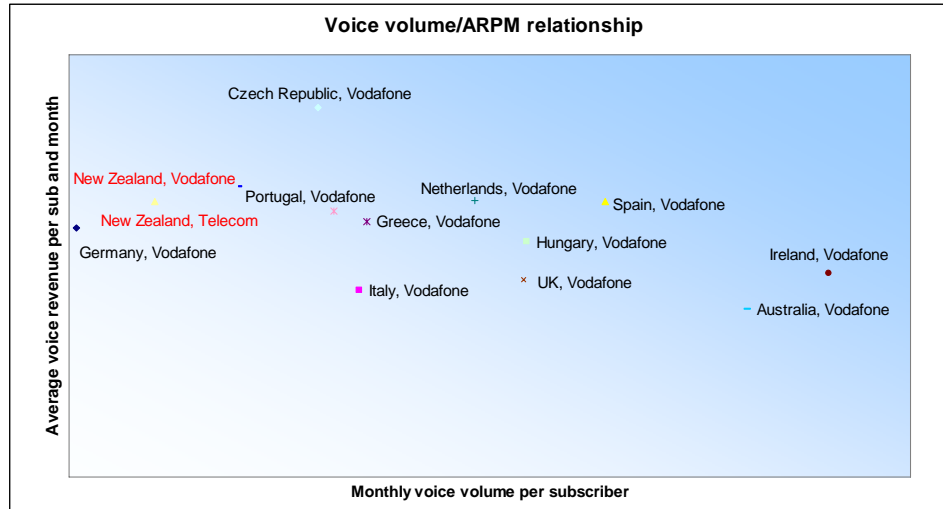
²⁸ See footnote 26

²⁹ See for example <http://www.stats.govt.nz/products-and-services/hot-off-the-press/household-economic-survey/household-economic-survey-year-ended-jun30-07-hotp.htm>



51. Mobile termination rates are one of the major drivers for costs for fixed-to-mobile and mobile-to-mobile calls. Therefore it appears that high termination rates will result in retail customers having high retail tariffs both for mobile-to-mobile as well as for fixed-to-mobile calls.
52. As in previous investigations the Commission has undertaken an analysis of the relationship between voice volumes and the average return per minute (“ARPM”). In order to do this, publicly available data from Vodafone Group international as well as from Telecom New Zealand was analysed.
53. Vodafone Group Headquarters regularly publishes financial information on its business operations across countries. This data includes services revenues, subscriber numbers per service (mobile prepaid or contract), mobile volumes (incoming and outgoing), and overall average revenue per user (“ARPU”) figures. Comparing the data of Vodafone’s international subsidiaries with the corresponding figures for Vodafone New Zealand and Telecom’s mobile unit illustrates that volumes in New Zealand are relatively low, whereas revenues per minute are relatively high³⁰.

³⁰ The Commission has adjusted the ARPUs by the purchasing power parity (PPP) published by OECD (http://www.oecd.org/department/0,3355,en_2649_34347_1_1_1_1_1,00.html). In order to extract the voice ARPU from the aggregated ARPU, total revenues were compared with the total voice revenues. The resulting share was used to adjust the total ARPU yielding the ARPU *voice only*.



54. These observations are consistent with the findings from previous analysis conducted by the Commission for investigations in the mobile roaming market³¹.

Geographical coverage and technology applied

55. Mobile networks are characterised by economies of scale. That is, average costs fall as output (minutes) increases. While the extent of economies of scale varies in different parts of the mobile network, their existence means that a large network will tend to have lower average costs than a smaller one.
56. Telecom states on its website³² that it covered around 97% of the populated areas of New Zealand by November 2007. Telecom distinguishes between areas with “primary coverage” and areas with “secondary coverage”. Primary coverage areas are characterised as geographical territories with strong radio signals (for mobile phones, smart or data devices). This includes indoor areas and built-up areas. In secondary coverage areas signal strength may decrease.
57. Telecom publishes mobile coverage maps³³. However, it remains unclear what mobile network generation Telecom is using (i.e. 2G/3G) and what services are provided in the primary and secondary coverage areas.
58. Telecom has publicly announced that it will be launching a W-CDMA/GSM network³⁴. It has indicated that its network will be operational by the end of 2008. Telecom’s deployment of a W-CDMA/GSM mobile network will enable it to supply national GSM roaming services.

³¹ See for example <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/mobilemarket.aspx>

³² See for example <http://www.telecom.co.nz/content/0,8748,200499-201927,00.html?nv=sd>

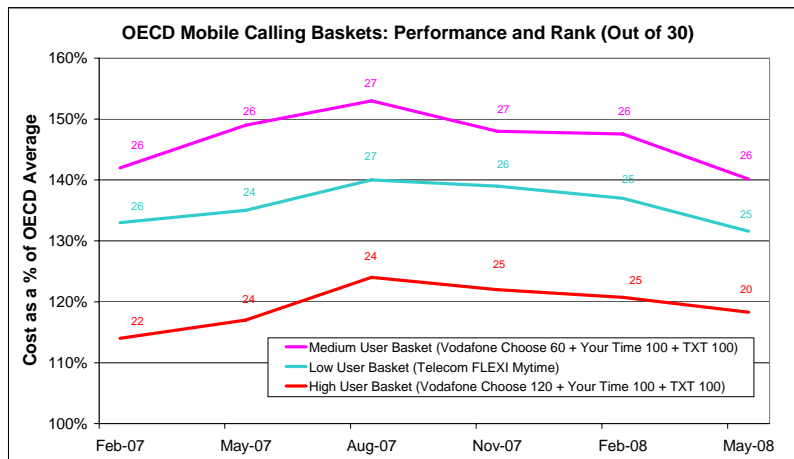
³³ See for example <http://www.telecom.co.nz/content/0,8748,204420-1066,00.html>

³⁴ See for example <http://annualreport07.telecom.co.nz/download/telecom-annual-report-2007.pdf>

59. Vodafone publishes information on mobile coverage on its website³⁵. Information from its earlier publications indicates that city centres are extensively covered, whereas in rural areas Vodafone appears to provide less coverage than Telecom. Similar to Telecom, it is not transparent in terms of what network technologies and services are being offered in different parts of the country. Vodafone recently announced plans to expand coverage of its 900 MHz 3G network from 63% of the population to 97% by April 2010³⁶.
60. Both Telecom and Vodafone have now completed the sale of spectrum to the new entrant, NZ Communications. Both companies have also accepted offers from the Ministry of Economic Development for the renewal of cellular radio spectrum rights in the 800 MHz and 900 MHz bands for a 20-year period from 2011/12.³⁷
61. Additionally, both Telecom and Vodafone have access to other spectrum that could be used at their discretion for either 2G or 3G.
62. Countries comparable to New Zealand such as Sweden, Norway and Finland with similar characteristics (with regards to market size, geography, topology and population)³⁸ have a 3G-network coverage up to 100% of the population³⁹.

Retail mobile services in New Zealand

63. In order to compare prices for mobile services in the retail market the Commission uses the *Teligen*⁴⁰ basket of low, medium and high usage mobile subscribers. This allows for a comparison between the prices for end-users, despite differences in underlying tariff structures. It benchmarks carriers from the lowest to the highest cost.



³⁵ See for example <http://www.vodafone.co.nz/help/coverage/index.jsp>

³⁶ Manawatu Standard, 7th July 2008

³⁷ Ministry of Economic Development, New cellular network given access to the airwaves, 15 May 2008

³⁸ See footnote 26

³⁹ See for example <http://www.pts.se/en-gb/Documents/Reports/Telephony/2007/Coverage-from-mobile-communication-systems-in-Sweden-2007---PTS-ER-200712/>

⁴⁰ <http://www.teligen.com/>

64. Vodafone's Base plans have not been benchmarked as *Teligen* has informed the Commission that it does not knowingly include online-only mobile plans in its benchmarking. The Commission considers that the Base plans are online-only plans as the Vodafone website is the only place where information on these plans can be obtained.
65. The other retail mobile plans available in New Zealand that are reported to the Commission on a quarterly basis by *Teligen* perform relatively poorly.
66. A search of industry websites for the standard retail fixed-to-mobile rates for all the operators offering at least a non-code access residential service in New Zealand in 2004 and 2008 yielded the following results:

FTM standard rates ⁴¹	June 2004		July 2008	
	Residential	Business ⁴²	Residential ⁴³	Business ⁴⁴
Telecom	71	47	65	38/35
TelstraClear	71	41	40	36
CallPlus (slingshot tolls)	51 ⁴⁵	n/a	39	n/a
WorldxChange	42 ⁴⁶	39	35	36
Ihug/Vodafone	49	39	38	35/42

67. Mobile termination rates were approximately 27 cpm in June 2004 and 16 cpm in July 2008, indicating a decrease in rates by around 11 cpm (-41%). The fall in residential fixed-to-mobile retail rates has ranged from 6 cpm to 31 cpm (-13% to -44%).
68. Telecom's average price of fixed-to-mobile calls was 41.8 cpm (excluding GST) for the quarter ended 30 June 2004 and had dropped to 32.6 cpm for the quarter ended 31 March 2008⁴⁷, a fall in average price of 9.2 cpm (-22%).
69. Comparing fixed-to-mobile rates for residential and business customers to wholesale termination rates from 2004 to 2008 suggest that there is a positive "pass-through" relationship between wholesale and retail markets. A reduction in wholesale termination rates of 41% resulted in a decrease of retail rates up to 44% in the residential segment and up to 25% in the business segment. The difference in price decreases between different customer segments is likely to be the result of price discrimination.

Wholesale mobile termination markets

70. The Commission understands that wholesale mobile termination rates are set at the same level as fixed-to-mobile termination rates. The fixed-to-mobile termination rates are set in

⁴¹ cpm including GST

⁴² These are standard business rates. Lower rates can probably be achieved from commercial negotiation and lower rates are offered to large corporate customers.

⁴³ Standard, direct dial rate, billing is per minute, rounded up to the nearest minute

⁴⁴ Standard, direct dial rate without bundling, billing is usually a minimum of one minute and then per second. If a split rate is given then first is for calling Vodafone mobiles and second for calling Telecom mobiles.

⁴⁵ A reduced rate of 47 cpm applies if also purchasing internet services from slingshot

⁴⁶ This is advertised as a special deal but has no given expiry date

⁴⁷ http://www.telecom.co.nz/binaries/mda_dec_07.pdf

accordance with deeds of agreement between the mobile operators and the Government⁴⁸. The current termination rate according to the deeds is 16 cpm. The rates for each operator decrease over each of the next four years, in a manner summarised by the following table:

Annual Period	Maximum FTM termination rate (cpm, excl. GST)	
	Telecom	Vodafone
Effective Date to 31 March 2008	17.0	17.0
1 April 2008 to 31 March 2009	16.0	16.0
1 April 2009 to 31 March 2010	15.0	15.0
1 April 2010 to 31 March 2011	14.0	14.4
1 April 2011 to 31 March 2012	12.0	14.0

71. In undertaking an analysis of a market, the Commission is looking at the conditions required to facilitate efficient competitive entry, rather than entry *per se*. To the extent that termination rates exceed the cost of providing these services, this imposes additional costs on an entrant that the provider of the termination service would not have to incur itself, and would therefore represent a barrier to entry.
72. It is generally accepted in economic theory that welfare is maximised in the long run in a perfectly competitive market when prices are set equal to long-run marginal cost⁴⁹. Setting prices according to long-run cost will lead to an efficient outcome in terms of incentives for market entry. Increased competition will result in more pressure to minimise costs over time, and lead to greater investment in innovative new technologies and service by operators. For example, mobile operators are more likely to deploy the latest technology in response to the increasing competitive pressure on the wholesale and the retail level.
73. In order to achieve the objectives laid down in the Act, the Commission's view is that prices in markets where there appears to be an access bottleneck due to the existence of market power, should be geared to the costs of an efficient operator employing the latest available technology.
74. The basis for calculating costs for access bottleneck services should be forward-looking long-run incremental costs (LRIC). Such a methodology promotes efficient production and consumption, and minimises potential competitive distortions. In a competitive environment, operators would compete on the basis of current or forward-looking costs based on efficient technologies available in the timeframe considered.
75. In the Commission's Schedule 3 investigation into *Roaming Services* in March 2008⁵⁰ a benchmark was used, based on those jurisdictions which apply forward-looking cost-based LRIC models for wholesale mobile termination rates. The Commission considers this methodology is in line with section 18 of the Act, that is promoting competition for the long-term benefit of end-users.

⁴⁸ <http://www.med.govt.nz/upload/45931/telecom-deed.pdf>

⁴⁹ See for example Kahn: "The Economics of Regulation" in John Wiley & Sons, Vol. 1, 1970, Vol. 2, 1971, reprinted by MIT Press, 1988.

⁵⁰ <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/mobilemarket.aspx>

76. The benchmark termination rate⁵¹ is 10.76 cpm⁵² for the median and the 11.56 cpm for 75th percentile. Due to the two-way nature of interconnection access services, the Commission considers the median is more appropriate than the 75th percentile.

Country	Mobile Termination Rate (cpm in NZ\$)
South Korea	0.0523
Malaysia	0.0552
Israel	0.0634
Australia	0.1047
Sweden	0.1076
UK	0.1138
Austria	0.1156
Spain	0.1174
France	0.1272
Average	0.0952
Median	0.1076

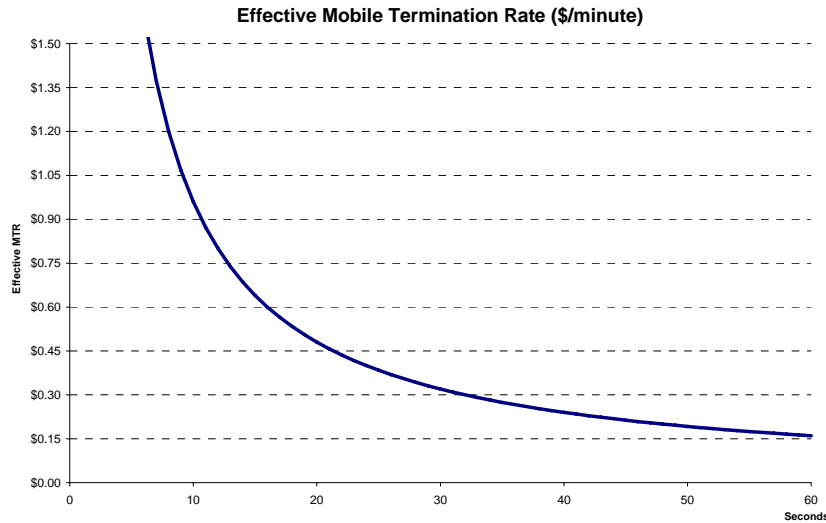
77. A comparison of the median termination rates of 10.76 cpm with the current wholesale termination rate of 16 cpm suggests that current termination rates are well above cost. Prices that are maintained above long-run costs on a sustained basis are an indicator of a lack of competitive pressure in the relevant market. Above cost prices for input bottlenecks are likely to be passed through to the retail level, leading to negative welfare effects and inefficient market outcomes.
78. The EU Commissioner for Information Society and Media, announced in a speech in June 2008⁵³ that mobile termination rates created “real distortions” in the EU single market. As a result, the EU Commission is currently considering publishing proposals that will encourage national telecom regulators to cut termination rates across the EU. The Commissioner announced that the EU wants to see a decrease in termination rates to between 1 and 2 euro cents by 2012 (2-4 cpm \$NZ) and signalled that the EU is also considering steps to cut the costs for data (termination) services such as SMS and browsing.
79. The Commission understands that the mobile rate to be paid to the terminating operator is based on a per minute basis for the first minute and on a per second basis after. This implies that the termination rate for voice calls which do last less than a minute are in fact higher than 16 cpm. The following sensitivity analysis shows the effect of mobile call duration on the effective termination rate to be paid by the originating party.

⁵¹

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/ContentFiles/Documents/Roaming%20Final%20Report.pdf>, p. 44

⁵² cpm: cent per minute (in NZ\$)

⁵³ Source: http://www.ft.com/cms/s/0/b727f24e-3b0c-11dd-b1a1-0000779fd2ac.html?nclick_check=1



80. The following table shows the average call hold time in 10 second increments and the corresponding effective MTR resulting.

Call Hold Time (seconds)	Effective MTR (cpm)
0	0
10	\$0.96
20	\$0.48
30	\$0.32
40	\$0.24
50	\$0.19
60	\$0.16

81. Some regulators have commenced an investigation into data termination services, particularly for SMS⁵⁴. In 2006 ARCEP, the French telecommunications and postal regulator, set rates for SMS termination⁵⁵ at 3 cents (6.27 cents NZ\$) and 3.5 cents (7.31 cents NZ\$) Euro per text respectively. ARCEP has announced that these rates are maximum price level due to the uncertainty about the underlying cost elements, and that it will review these rates. Data available from the Commission's investigation on Mobile Roaming⁵⁶ in March 2008 indicates that the SMS cost per text is likely to be under 5 cents.

Question 5.1

- (a) What effects on prices and average network costs can be expected if the geographical coverage for mobile services is increased and if new technologies are implemented (e.g. 3G networks)?
- (b) Can the decrease in fixed-to-mobile retail rates from 2004 to 2008 be explained by a pass-through from lower wholesale termination rates? Are

⁵⁴ See for example <http://www.ofcom.org.uk/telecoms/ioi/mbp/smsreview/>

⁵⁵ Source: http://www.arcep.fr/uploads/tx_gsavis/06-0593.pdf

⁵⁶ Source:

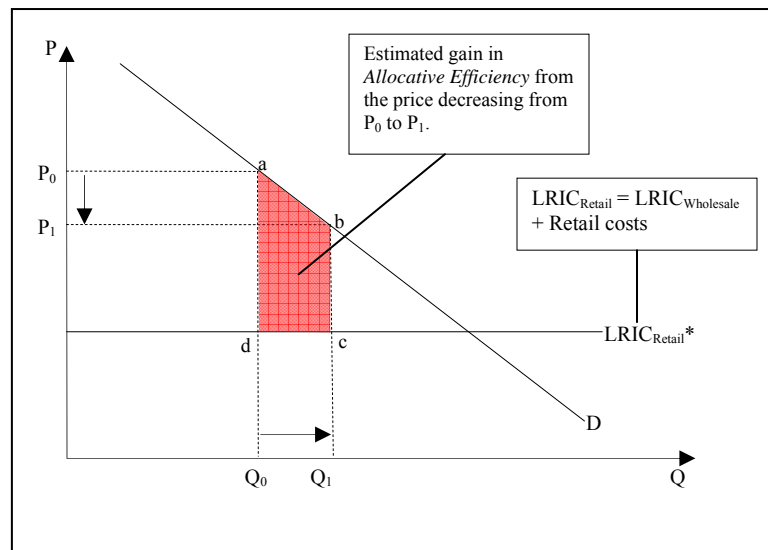
<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/ContentFiles/Documents/Roaming%20Final%20Report.pdf>

there any other potential explanations for this decrease?

- (c) What are possible explanations for price differentials between business and residential customers?**
- (d) What is the average duration of a phone call to mobile customers?**
- (e) Are current wholesale voice termination rates for fixed-to-mobile services different to tariffs for mobile-to-mobile? If so, please explain the mechanism applied the current tariff and why tariffs are different.**
- (f) Do you agree with the Commission's approach to benchmarking termination rates against cost-based rates set in other jurisdictions? If not please explain why and what the appropriate mechanism should be.**
- (g) Do you agree with the principle described that tariffs for services with bottleneck characteristics should be set at efficient underlying long-run costs? If not, on what basis should access tariffs to these bottlenecks be set?**
- (h) On what principle do you bill termination rates for data and for voice services (e.g. per minute, per second, per unit, etc.)?**

6. Welfare analysis

82. In considering whether a Schedule 3 Investigation into mobile termination rates should be undertaken, the Commission must consider whether a recommendation to specify or designate mobile termination would promote competition for the long-term benefit of end-users⁵⁷ of telecommunications services in New Zealand. One of the factors in determining whether this purpose is achieved is to consider efficiencies that will, or will be likely to, result. There are three different types of efficiencies to be considered:
83. *Allocative efficiency* involves ensuring resources are allocated to those producers and consumers who value them most highly. That is, the goods and services that are produced in the economy are the ones most valued by consumers and the distribution of production costs amongst firms within the industry minimises industry-wide costs. Allocative efficiency is achieved by setting prices equal to long-run marginal costs. Decreasing wholesale access prices for access seekers to cost reflective levels in the long run allows for increased competition and lower prices in the downstream retail market where the wholesale service is being used.
84. The static *allocative efficiency* gain to consumers results from the decreasing retail prices towards cost and increasing demand. An example of this is shown in the diagram below.



85. *Productive efficiency* involves each firm combining its inputs or resources in such a way as to produce a given level of output of goods and services at a minimum cost to society. The decrease in the wholesale access price to a more cost-reflective level will also decrease the costs for access seeker supplying the downstream retail market.
86. *Dynamic efficiency* is associated with ensuring that incentives are maintained for the access provider to innovate and invest in essential infrastructure over time. An operator

⁵⁷ Section 18 (1) of the Telecommunications Act

with SMP is likely to set a price that exceeds the long-run cost-based competitive market price, yet substantially under-invests in the market. However the Commission is aware that investment incentives (at a reasonable rate of return on and off the efficient capital) are an essential factor in the application of regulatory remedies.

87. In order to estimate the potential allocative and productive efficient welfare effect by reducing wholesale voice termination tariffs to a cost-based level, three isolated effects have to be taken into account:
- A price effect on the wholesale level;
 - A price effect on the retail level (which will reflect the wholesale price effect and the level of pass-through); and
 - A volume effect on both retail and wholesale level.
88. A decline in retail prices could be expected to lead to an expansion in demand for those retail services. The consequent increase in consumer surplus will include an increase in allocative efficiency as the infra-marginal units of additional demand experience a gain in surplus.
89. A significant reduction in mobile termination rates is likely to lead to a significant reduction in retail rates (“pass-through” effect) which again has an impact on call volumes (“volume effect”). Furthermore it could also be expected that any margin retention by operators providing retail mobile calls, as a result of reduced mobile termination rates, could attract new entry through higher margins.
90. The Commission’s view is that where wholesale termination rates are set above cost, retail prices tend to be high and usage rates lower, thus decreasing overall efficient welfare. Lowering wholesale termination prices to an efficient cost level would therefore not only lead to lower retail tariffs, but also lead to an increase in overall demand. The magnitude of this increase in demand will depend on the price elasticity.
91. Potential benefits from regulating termination services can be obtained by comparing termination costs that would be paid by an entrant absent regulation, with the likely termination costs under regulation. The magnitude of the differences in cost and hence in prices with and without regulation will determine whether, and to what extent, the reduction in the entrant’s costs under regulation will enhance the prospect of entry. In a competitive downstream market, such cost savings could be expected to ultimately flow through to consumers.
92. It has been argued that there are two main kinds of telecommunication externalities: network externalities and call externalities. *Network externalities* arise where existing telecommunications network subscribers value the new communication opportunities arising from new subscribers joining telecommunications networks separately from the value placed on these subscriptions by the individual purchasing them. Other potential externalities to the consumption of telecommunications services are *call externalities*.

These relate to the feature of telecommunications services that they usually involve some means of communication between two (or more) individuals. Hence, consumption of the service is generally joint, and therefore provides benefits for more than one consumer. However, there is a controversial debate on the existence and on the effect that externalities might have.

Question 6.1

- (a) To what extent are price reductions in the wholesale market for termination likely to be passed through to retail markets?**
- (b) Would a difference in price reduction pass-through be expected between different customer groups (e.g. business or residential customers)?**
- (c) How long is any pass-through likely to take?**
- (d) Are there other actions that could be taken to encourage reductions in mobile termination rates to be passed through to end-users?**
- (e) What are the potential effects on other markets such as the fixed termination market, SMS termination and data traffic?**

Definition of the counterfactual

93. Establishing an appropriate counterfactual scenario, which is what is likely to happen without any regulatory change, is a key step in the subsequent analysis of the benefits and costs of regulation. It forms a benchmark against which anticipated changes arising from the proposed regulation can be measured.

Question 6.2

- (a) To what extent are commercial negotiations being undertaken for mobile termination services?**
- (b) What is the likelihood of commercial agreements being reached for mobile termination services, and the likely outcome of commercial negotiations?**
- (c) What is the most appropriate counterfactual for the services?**

Definition of the factual

94. The factual scenario is what is likely to happen if regulatory changes are implemented. The Commission will base its view of a suitable factual on an assessment of what is likely to occur if amendments are made as a result of the Schedule 3 investigations. The effects will be assessed in terms of section 18 of the Act. For example, in considering whether to subject mobile termination to regulation, it will be necessary to consider the form of regulation, and in particular the way in which the regulated prices of those services would be set.⁵⁸

⁵⁸ The nature of the proposed regulation, including the pricing principles that would apply, are discussed in chapter 4.

95. In addition, it will be necessary to consider what impact any regulatory changes would have in terms of promoting new entry and increased competition in the market, and the effect of any such new entry and increased competition on *inter alia* the level of prices, service quality and variety, and innovation in the market in which retail mobile services are supplied to end-users.

Question 6.3

- (a) What is the likely factual? How would the service(s) compare to the services available under the counterfactual (in particular, in terms of pricing)?**
- (b) How would the introduction of new specified or designated services lead to long-term benefits for end-users, which would not otherwise have been forthcoming? What empirical evidence is available to support such scenarios?**
- (c) What is the interrelationship between the voice and SMS services? How does the price of one service affect the other?**
- (d) To what extent would the introduction of new specified or designated services make new entry more viable?**

7. Preliminary views

96. The market overview provides some facts about the current level of competition in the mobile market. The mobile market in New Zealand is characterised by high concentration with two operators whereas comparable overseas jurisdictions⁵⁹ have four or more operators. Market shares of the two operators are at the 50% level. Although the level of voice volume per subscriber appears to be lower compared to other countries, the returns per minute are higher.
97. The observations both in the wholesale and retail mobile market indicate that New Zealand markets are subject to lower competitive pressure than in other OECD countries.
98. In the downstream retail market, prices for mobile services in New Zealand remain relatively high compared to other OECD countries for low, medium and high user baskets. Mobile volumes in New Zealand's retail market are lower compared with other jurisdictions overseas, whereas average return per minute tends to be above average.
99. Mobile termination rates in the wholesale market are currently at 16 cpm, whereas the median benchmark is 10.76 cpm.
100. The Commission's view is that prices in markets with a bottleneck characteristic should be set with reference to the long-run incremental cost of supplying the service, as this provides suppliers with a reasonable rate of return on and of efficiently invested capital.
101. Pricing differentials with regards to on-net discounts will need to be assessed as a form of potential anti-competitive behaviour on a case-by-case basis.

⁵⁹ See footnote 20

8. Consolidated list of questions for consultation

102. The questions contained in Sections 3 to 6 are listed below. Submitters should not feel constrained from raising additional matters not covered by the questions. The Commission wishes to consider all issues relevant to whether or not to launch a Schedule 3 investigation. When answering questions, the Commission requests that parties explain the rationale for why a particular view is taken and, if possible, give supporting evidence for the view.

Question 3.1

- (a) Is the market definition as outlined above (market for mobile termination services) appropriate? If not, what is the appropriate definition/delineation?**
- (b) Are there other markets that respondents consider the Commission should be taking into account?**

Question 4.1

- (a) Is the approach that termination is likely to be a bottleneck appropriate (arguments have to take into account both retail and wholesale markets)?**
- (b) What additional effects (e.g. on other markets) can arise if considering mobile termination services as an essential bottleneck?**
- (c) What factors can potentially lead to on-/off-net call discounts? Under what circumstances do discounts lead to predatory price discrimination?**

Question 5.1

- (a) What effects on prices and average network costs can be expected if the geographical coverage for mobile services is increased and if new technologies are implemented (e.g. 3G networks)?**
- (b) Can the decrease in fixed-to-mobile retail rates from 2004 to 2008 be explained by a pass-through from lower wholesale termination rates? Are there any other potential explanations for this decrease?**
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- (c) What is the interrelationship between the voice and SMS services? How does the price of one service affect the other?
- (d) To what extent would the introduction of new specified or designated services make new entry more viable?