

Appendix A



POST- AND TELECOM
ADMINISTRATION

Analysis of wholesale market for voice call termination on individual mobile networks (Market 7)

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Contents

1.0	Introduction	7
1.1	General.....	7
1.2	Electronic communications legislation.....	7
1.3	Implementation of market analysis by the PTA	9
1.4	About market definition.....	9
1.4.1	General	10
1.4.2	Framing of product and service markets	10
1.4.3	Framing of geographic market	10
1.4.4	Conditions for being able to define other markets	11
2.0	Description and definition of the service market in question.....	12
2.1	Definition in the ESA recommendations.....	12
2.2	Overview of market conditions and parties on the market.....	13
2.2.1	Companies on the market.....	14
2.2.2	Development of demand	19
2.2.3	The development of supply	21
2.3	PTA definition of the relevant markets	22
2.3.1	Introduction	22
2.3.2	Assessment of substitutability in demand at the retail level	22
2.3.3	Assessment of substitutability in demand at the wholesale level.....	26
2.3.4	Conclusions on substitutability in demand.....	27
2.3.5	Assessment of substitutability in demand at the retail level	27
2.3.6	Assessment of substitutability in supply at the wholesale level.....	27
2.3.7	Conclusions on substitutability in supply.....	27
2.3.8	Further on market definition	27
2.3.9	SMS	28
2.3.10	Third generation mobile phone service	29
2.4	Conclusion regarding definition of service markets.....	29
3.0	Geographic demarcation of the relevant market	31
4.0	Analysis of market for call termination in mobile phone networks (Market 7).....	33
4.1	Introduction	33
4.2	Market share	33
4.3	Entry barriers	33
4.4	Customer buying power.....	34
4.5	Price development	36
4.6	Assessment of significant market power on the relevant markets and designation of companies with significant market power.....	39
4.6.1	Siminn	41
4.6.2	Vodafone	41
4.6.3	Nova	41
4.6.4	IMC Ísland.....	41
4.7	Conclusion.....	42
5.0	Imposition of obligations	43
5.1	Obligations - general	43
5.2	Competition problems	44
5.2.1	General – about competition problems	44

5.2.2	Competition problems in markets for call termination in individual mobile phone networks	44
5.3	Obligations in force	45
5.3.1	Obligations imposed on 20 July 2006	45
5.3.2	The effect of obligations in force	47
5.4	Proposals for obligations	48
5.4.1	Obligation to provide access	49
5.4.2	Obligation for non-discrimination.....	50
5.4.3	Obligation for accounting separation	53
5.4.4	Obligation for monitoring of tariffs	54
5.4.5	Cost accounting	64
5.5	Assessment of the impact of obligations	65
5.5.1	The necessity to impose the obligations in question	65
5.5.2	The impact of obligations.....	66

Summary and conclusions

This document contains the PTA draft analysis of wholesale market for call termination on individual mobile phone networks, which is Market no. 7 in the ESA directive for service markets from 2008. Market analysis is the basis for deciding whether special (regulatory) obligations be imposed, maintained or lifted on electronic communications companies that have been designated as having significant market power.

An analysis of this market was made in 2006.¹ The conclusion of this analysis was that Siminn and Vodafone had significant market power in their mobile phone networks.

- Obligation for access
- Obligation for non-discrimination.
- Obligation for transparency, including the publication of a reference offer.
- Obligation for separation of accounting.
- The obligation is based on price comparison with analogous markets abroad and companies were required to lower their prices in four steps over two years, down to ISK 7.49 per minute.

At Siminn the following obligations were imposed for the NMT network:

- Obligation for access
- Obligation for non-discrimination.
- Obligation for monitoring of tariffs, which meant that increases to the existing price list were prohibited.

More countries now offer call termination on individual mobile phone networks than in 2006. The company Nova began operating UMTS (3G) networks in December 2007 in addition to which the company IMC that has had frequency rights since the year 2000 will now be scrutinised. That company was not considered to have significant market power on the markets in question in previous analyses despite having offered call termination in its own network. IMC has plans to develop a mobile phone network during the next months and has made a roaming agreement with Siminn. IMC's sister company, Alterna, has launched a major marketing campaign on the Icelandic mobile phone market in April 2010 with opening of a retail outlet and with an advertising campaign.

Though there are now more companies on the mobile phone market it does not have a significant effect on competition in the markets in question as they are demarcated by each individual network where each company has 100% market share in call termination on its own network and there are no possibilities for substitutability, neither on the supply nor on the demand side, for call termination. It is unlikely that this will change in the near future. Nor do there seem to be other real alternatives for users at the retail level that could provide control on pricing of call termination on mobile phone networks.

UMTS services were first offered in 2007 but the advent of this service did not change the conditions of competition on the markets in question. At Siminn and Vodafone this service is operated in conjunction with GSM service and in the case of call termination it is not possible

¹ The market was then no. 16 in ESA directives. In the existing directives from 5 November 2008 the market was no. 7 but its specification is unchanged.

to differentiate between the services, neither regarding its usability nor pricing. UMTS services have no effect on the lack of substitutability for call termination in individual networks.

The service markets in question thus cover the call termination in individual mobile phone networks. The mobile networks covered in this instance are UMTS (3G), GSM 900 and 1800 and NMT 450. For this reason the PTA intends to specify the following service markets:

- Call termination in the Siminn GSM/UMTS mobile phone network.
- Call termination in the Siminn NMT mobile phone network.
- Call termination in the Vodafone GSM/UMTS mobile phone network.
- Call termination in the Nova UMTS mobile phone network.
- Call termination in the IMC Ísland GSM mobile phone network.

PTA considers that the geographic market for voice call termination in individual mobile phone networks is the whole country.

All companies have a 100% market share in call termination in their own mobile phone networks. In the opinion of the PTA the markets in question are characterised by clear entry barriers and possible competition is not likely for the next 2-3 years. Given the market analysis there are indications that competition circumstances on the markets do not exert pressure on rates for call termination on individual mobile phone networks. The technology does not offer, under the current circumstances, the possibility of substitutability in the supply. There is no countervailing buyer power, neither at wholesale nor at the retail level, to any degree, and there is no indication that competitors, customers or consumers can influence rates for call termination on individual mobile phone networks. The PTA thus considers that all the above mentioned companies have significant market power and plans to designate Siminn, Vodafone, Nova and IMC Ísland as companies having significant market power on markets for the call termination in their mobile phone networks.

The competition problem identified by the PTA on the markets in question can be first and foremost attributed to the fact that an electronic communications company that controls the network where a call is terminated has a monopoly on that market. Most competition problems on the markets relate to the termination rate. In the opinion of the PTA there is overcharging on calls originating from other mobile phone networks than the one in which they terminate. The costs are thus passed on to those users that are connected to other mobile phone networks or fixed networks. Then the big difference that exists between electronic communications companies termination rates also negatively affects consumers who find it difficult to see how much a call costs. An excessive termination rate can also affect entry of new service providers into the mobile phone market. In the opinion of the PTA there are various indications that the rates for call termination on individual mobile phone networks are higher than their cost warrants, particularly in the new Siminn cost analysis and the fact that off-net calls are much more expensive than on-net calls.

The PTA intends to impose the following obligations as measures towards solving the competition problems on the markets:

Obligations on Siminn for the GSM/UMTS networks:

- Obligation for access

- Obligation for non-discrimination.
- Obligation for separation of accounting.
- Obligation for monitoring of tariffs, which involves lowering call termination rates to ISK 4, or another amount decided by the updated Siminn cost analysis. , in four steps until 1 January 2013. The price is determined with a cost model in accordance with the LRAIC² methodology where calculations are based on a top-down model.
- Obligation for cost accounting.

Obligations on Siminn for the NMT network:

- Obligation for access
- Obligation for non-discrimination.
- Obligation for monitoring of tariffs, which meant that increases to price list were prohibited.

Obligations on Vodafone:

- Obligation for access
- Obligation for non-discrimination.
- Obligation for separation of accounting.
- Obligation for monitoring of tariffs which involves lowering call termination rates to ISK 4, or another amount decided by the updated Siminn cost analysis, in four steps until 1 January 2013.

Obligations on Nova and IMC:

- Obligation for access
- Obligation for non-discrimination.
- Obligation for monitoring of tariffs which involves lowering call termination rates to ISK 4 or another amount decided by the updated Siminn cost analysis, in four steps until 1 January 2013.

² Long-run average incremental cost. *Cost that is added or is saved when a specific activity is started or stopped on the assumption that all cost is variable..*

1.0 Introduction

1.1 General

1. This document contains the PTA draft analysis of the wholesale market for voice call termination in individual mobile phone networks (Market 7). The PTA published this analysis of the market³ along with its decision on obligations on companies with significant market power on 20 July 2006. Repeat market analyses are planned at appropriate intervals in order to monitor whether changes occur on the markets. PTA considers it the appropriate time to review its previous analysis and therefore publishes this draft of a new analysis for comment.

2. This document is based on the draft that was submitted for consultation with a letter dated 5 October 2009, where electronic communications companies and other stakeholders were offered to make comments on the market analysis and its conclusions. The following parties sent in comments on the first draft: The Competition Authority, Siminn hf., Og fjarskipti ehf. (Vodafone), Nova ehf. and IMC Ísland ehf. (IMC). On 18 February 2010 the PTA introduced limited additional consultation for two additional changes that the institution planned to change from the initial first draft. Comments were received from the Competition Authority, Siminn, Nova and IMC. The above-mentioned comments and the position of the PTA on these comments are covered in Appendix B to this Decision. The analysis of Market 7 has now been updated in accordance with those comments that were taken into account and in addition all statistics have been updated in line with the newest figures. On June 14, the draft was sent to the EFTA Surveillance Authority (ESA) for consultation, according to Paragraph 1 of Article 7 of Act 69/2003, on the Post and Telecom Administration. On July 14, the PTA received a letter from ESA regarding the draft decision. ESA made no comments to the draft decision. Therefore, a decision based on the updated draft will now be published to the electronic communications companies.

3. The analysis is in three main parts. The first is a definition of the service markets and their geographic limits. Then the market that has been defined is analysed and it is ascertained whether there is active competition on that market or whether one or more companies has significant market power. Finally an evaluation is made on whether it is appropriate to impose, maintain change or lift obligations on companies on this market.

4. The markets are in continuous development which is why they must be examined again, within a reasonable time frame. When analysing markets, consideration is given to likely developments in the near future, to the extent possible. The period the analysis is intended to span depends to a certain extent on the characteristics of the market in question, but on average one can assume that the results of analyses will apply for two to three years.

1.2 Electronic communications legislation

5. The Act on Electronic Communications no. 81/2003, implements the EU directive on electronic communications.⁴ EU electronic communications legislation is intended to create a

³ This is the same market as that designated as Market 16 in the EFTA Supervisory Authority directives for the markets in question from 16 June 2004, see further detail in Chapter 2.

⁴ This concerns the following directives: 1) Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to and connections with electronic communications networks and related facilities (Access and Connections Directive), 2) Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive) 3) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a

homogenous operating environment for electronic communication companies in Europe, to limit barriers and create conditions for sustainable competition for the benefit of consumers.

6. The Act on Electronic Communications imposes the obligation that the PTA defines individual electronic communications markets by type and geographic area in accordance with the main principles of competition legislation and in accordance with the EEA Agreement. In addition the PTA is obliged to analyse the specified markets and to determine whether there is active competition on these markets. If the PTA comes to the conclusion that there is active competition on the markets, i.e. that no company has significant market power, the institution is prohibited from imposing obligations on the companies. Should the institution have previously imposed obligations on companies on the markets then they shall be lifted and new obligations shall not be imposed. Should PTA however come to the conclusion that there is not effective competition on the markets because one or more companies have significant market power then the institution is obliged to designate them as having significant market power and to impose appropriate obligations on them.

7. The EU Commission has issued Guidelines and recommendations regarding market analyses. On the one hand they are Guidelines on market analysis and evaluation of significant market power⁵ and on the other hand recommendations on the markets.⁶ ESA has issued similar Guidelines⁷ (hereafter called “the Guidelines”) and recommendations⁸ (hereafter called “the recommendations”) and the PTA will take account of both the recommendations and Guidelines from ESA and from the Commission when implementing market analyses. The report of the European Regulatory Group of National Regulatory Authorities (ERG⁹) on obligations that may be imposed on electronic communications companies with significant market power will also be kept in mind with the aim of enhancing

common regulatory framework for electronic communications networks and services (Framework Directive) and 4) Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

⁵ Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services, 2002/C 165/3.

⁶ The existing recommendations are: Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (notified under document number C(2007) 5406) (2007/879/EC)

and notes:

Commission Staff Working Document - Explanatory Note Accompanying document to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Second edition) {(C(2007) 5406)}

⁷ EFTA Surveillance Authority Guidelines of 14 July 2004 on market analysis and the assessment of significant market power under the regulatory framework for electronic communications networks and services referred to in Annex XI of the Agreement on the European Economic Area.

⁸ The existing recommendations are: EFTA Surveillance Authority Recommendation of 5 November 2008 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with the Act referred to at point 5cl of Annex XI to the EEA Agreement (Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services), as adapted by Protocol I thereto and by the sectoral adaptations contained in Annex XI to that Agreement.

⁹ Abbreviation for “European Regulatory Group of National Regulatory Authorities”.

competition.¹⁰

8. In the recommendations currently in force on the markets, seven electronic communications objectives have been defined in advance that the PTA, in accordance with the existing legislation on electronic communications and with Iceland's obligations according to the EEA Agreement, is obliged to analyse. Electronic communications legislation also prescribes that the PTA define these markets in accordance with the circumstances that prevail in Iceland. In this connection it could be that the PTA analysis would differ from that allowed for in the recommendations. The PTA is also authorised to investigate all the appropriate electronic communications markets for the market analysis, whether or not they are itemised in the recommendations.

1.3 Implementation of market analysis by the PTA

9. As stated in the PTA promotional documentation on market analysis, the implementation may be divided into three phases:¹¹

- Define the appropriate service markets and geographic markets.
- Analyse each of the defined markets, check whether competition is effective and decide whether one or more companies can be found that has significant market power.
- Decide whether it is appropriate to impose, maintain, change or lift obligations on companies with significant market power.

10. This document contains the PTA conclusions from all three phases. These conclusions are based on the PTA draft analysis of the market in question that was submitted for consultation by letter dated 5. last 5 October. Those comments have been collected and answered in Appendix B. The analysis of the market in question has been updated in accordance with those comments that were taken into account and in addition all statistics have been updated in line with the newest figures from the close of 2009. A draft decision, along with this appendix and Appendix B are reported to ESA and other surveillance organisations in the EEA and to the companies in question. Should ESA have no comments on the draft decision then it will be announced to the companies in question and to others.

11. The PTA gathered information for this analysis by sending a questionnaire to companies that had a frequency rights licence for mobile phone services on 13 February 2009. The institution has also collected information, including statistics, and has had informal communications with representatives of marketing parties. Statistics, including statistics on the mobile phone market, is collected from all marketing parties every 6 months. The PTA also collects information on all changes to price lists concurrently on their publication.

1.4 About market definition

¹⁰ Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework. Final Version, May 2006. ERG (06) 33. The document can be viewed at: http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf.

¹¹ The PTA promotional documentation on market analysis was first published in October 2003 and updated in August 2005. A new promotional brochure was published in 2009. See also the regulations on telecommunications no. 741/2009, from 10 August 2009. See [http://www.pfs.is/upload/files/Kynningarrit_um_markaðsgreiningu_ágúst_2009\(1\).pdf](http://www.pfs.is/upload/files/Kynningarrit_um_markaðsgreiningu_ágúst_2009(1).pdf)

1.4.1 General

12. According to Article 16 of the Electronic Communications Act No. 81/2003 with subsequent amendments, the PTA shall define markets for goods or services and geographic markets in accordance with the principles of competition law and obligations under the Agreement on a European Economic Area (EEA). As has been indicated it is necessary for the PTA to evaluate whether the markets as defined in the recommendations harmonise with Icelandic circumstances. Both service and geographic markets must be defined before an evaluation can be made to ascertain whether market circumstances warrant the imposition of obligations. Market definition is prescribed in more detail in Chapter II of the regulations governing market definition in electronic communications no. 741/2009.

1.4.2 Framing of product and service markets

13. In Article 4 of the Competition Act no. 44/2005 a market is defined as a sales area for goods and substitute goods and/or a sales area for services and substitute services. Substitute goods and substitute services are defined as goods or services that can in part of fully replace others, not only on the basis of their tangible attributes or of buyers intended use or of price, but also with respect to competition conditions and/or the conditions of supply and demand. Those goods that provide competitive restraint are thus named substitute goods and each market is composed of goods that have inbuilt proxies. Goods that can only to a limited degree replace each other are not on the same market.

14. A substitute is evaluated from two angles. On the one hand there is customer perception of how easily one product can replace another (demand substitutability). On the other hand it is a measure of the ease with which the competitor of a given company can adapt his product such that it falls within the market covered by the product of the company in question (supply substitutability).¹² Demand substitutability is considered the basis for market definition while supply substitutability is less important and is related more to assessment of possible competition.

1.4.3 Framing of geographic market

15. When a service market has been defined the next step is to define its geographic boundaries. The main rule is to refer to the scope of the electronic communications network and the territory covered by the laws. Geographic framing is also based on substitute goods or services both on the supply and demand sides. A geographic market is that area where goods or services are offered at sufficiently homogeneous competitive conditions. In assessing proxies on the demand side it is right to take into account customer taste and the geographic purchasing patterns of the customers. On this basis it is possible to frame the market as local, regional, national or cross border i.e. a market that covers a number of countries. PTA does not however have the authority to frame on its own initiative international markets. If a market is considered to cover more than one country then the European surveillance institutions collaborate on this definition along with the Commission and ESA as appropriate.

16. There are two very important issues in geographic framing, on the one hand the size and distribution of the electronic communications network and on the other hand price. If the electronic communications network covers the whole country, then this is an indication that the framing shall be national. If the electronic communications network is divided by region,

¹² See further in 39 in the Guidelines and Explanatory Memorandum appended to the Commission's recommendation, Chapter 3.1.

then this is an indication that the framing shall be regional. If the price is the same for the whole country, then this is an indication that the framing shall be national. Should the price vary by region, then this is a strong indication that there is no substitutability on the supply or demand side and that this is a case of distinct geographic markets.¹³

1.4.4 Conditions for being able to define other markets

17. PTA can define other markets than those in the ESA recommendation, e.g. because of special circumstances in this country. In those conditions ESA shall be consulted. When other markets are to be defined the following conditions need to be fulfilled so that obligations can be imposed on them, see Paragraph 3 Article 4 of Regulation no. 741/2009 on Market Analyses in the field of electronic communications:

- That there are major and persistent entry barriers.
- That the market is structured such that active competition cannot be expected in the near future.
- That the application of competition legislation will not alone suffice to remedy problems where the market has failed.

The above conditions are in the opinion of the EU Commission and ESA in place on the markets here being examined.

¹³ Geographical framing is discussed in Chapter 2.2.2 in the Guidelines, also in COMMISSION NOTICE on the definition of the relevant market for the purposes of Community competition law. (OJ C372 9/12/1997) and ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008, ERG (08) 20, final CP Geog Aspects 081016.

2.0 Description and definition of the service market in question

2.1 Definition in the ESA recommendations

18. The service market being examined here is equivalent to Market 7 in the ESA recommendations from 5 November 2008, where the market in question is defined as follows:

Voices call termination on individual mobile networks.¹⁴

19. In the explanatory note to the Commission Recommendation of 2007,¹⁵ on which the ESA recommendations are based, it is stated that the market is the same as was defined in earlier recommendations, i.e. Market 16 in the Commission recommendations from 2003 and the ESA recommendations from 2004.

20. Call termination takes place such that each mobile phone network is connected to another phone network with what is called interconnection where technical interfaces are configured in a specific manner. Mobile phone companies make agreements with each other on such interconnections where the charges the companies make for receiving calls or data transfer into their system are prescribed and for calling up a user in their own system for termination of the phone call.

21. The Commission has pointed out that the service of call termination in mobile phone networks is a built-in feature in telephone calls that originate either in a fixed line network or in a mobile phone network. The charge for call termination is set by the party that provides it and as things are organised today, subscribers of that party have usually little opportunity to influence that charge as it is the person that makes the call that pays for the termination - the CPP principle (the Calling Party Pays principle). The termination charge is part of the cost price of the service provider of the party making the call and this charge is included in the provider's retail price.

22. At the retail level the termination of a phone call to one party does not come in place of the termination of a phone call to another party and this limitation of demand substitutability also affects the wholesale level. In addition to this the mobile phone companies are obliged to terminate a call to the user to whom a call has been requested as all electronic communications companies that provide general telephone services have the right and are obliged to negotiate interconnection, see Article 24 of the Electronic Communications Act.

23. If a competitor decides to raise the charge for call termination it is not easy for the other service provider to react by offering termination. For this to be possible they would need access to information on the SIM card of the user in question. This information is not accessible to parties other than the company to whom the user is a subscriber. It is however the conclusion of the Commission that the market is larger than termination with each single user as it is not possible for the service provider to discriminate without notice in termination rates between users on the same network. In the light of the above the market in question is at least defined as call termination in each mobile network.

¹⁴ See EFTA surveillance institution recommendations from 5 November 2008 on the goods and service markets in question, item 7 in the Annex.

¹⁵ See Explanatory Note Accompanying document to the Commission Recommendation of 17 December 2007 on Relevant Product and Service Markets, p. 41-44.

24. Taking the above into account it is assumed that a mobile phone company and the service of call termination in its own network are fully connected. The Commission therefore considers it important to investigate if there is a possibility of substitutability on the supply and demand sides that could create control on the pricing of termination such that mobile phone companies cannot price termination at will.

25. The Commission considers, with a view to the above that there is currently no possibility of substitutability on the supply side but that such might become possible in the future with e.g. software enabled SIM cards.

26. Nor is it assumed that there is a possibility of substitutability on the demand side at wholesale level. Demand at wholesale level is subject to supply as the service provider of the user who makes a call has no option but to buy termination from the service provider of the party he is calling.

27. At retail level there are however various possibilities for substitutability on the supply side, e.g. other types of telephone call or other forms of communication such as short calls with a request to call back, call transfer and SMS. The Commission considers nevertheless that it is unlikely that other manners of communication provide sufficient control on the pricing of call termination in mobile phone networks.

28. Countervailing buyer power of users on the retail market could possibly create a counterbalance against increases in service providers' termination rates. It however requires that the party receiving the call is aware of the cost of termination of calls to him and that this influences his choice of service provider. The Commission considers however that mobile phone users have little information on termination rates in their own networks, i.e. what it costs for others to call them (the CPP principle).

29. A closed user group is another example of how countervailing buyer power at the retail level can possibly create control on the pricing of termination. The Commission considers however that this kind of countervailing buyer power is unlikely to provide a level of control that makes a difference. The reason is that a service provider can offer such groups special terms that are lower than the standard price for telephone call termination.

30. The Commission has presented several possible ways of defining the market in question. The first is to define a domestic market for call termination in mobile networks. This possibility is however rejected with reference to the fact that the required substitutability on the supply side is not in place. Another possibility is a domestic market where mobile phone service is defined as a package, i.e. termination is linked to access and origin of the telephone call. In order for this definition to work, mobile phone users need to be aware of what it costs to call them, a condition that the Commission considers not to be fulfilled.

31. Finally the Commission comes to the conclusion that call termination in individual networks is a distinct market. One consequence of this is that all mobile phone network service operators have a monopoly on termination in their own networks. It is however noted that this does not necessarily mean that they are all in a dominant market position. This depends on whether there is sufficient countervailing buyer power to balance the mobile phone network operator's ability to operate without considering competitors, customers and users.

2.2 Overview of market conditions and parties on the market

2.2.1 Companies on the market

32. In Iceland today there are four companies that operate mobile phone networks. They are Siminn hf., Og fjarskipti ehf (Vodafone), Nova ehf. and IMC Ísland ehf. The company IceCell ehf. was granted frequency rights in 2007, but has not yet commenced developing a network and had its frequency licence cancelled by the PTA decision no. 5/2010 from last 11 March¹⁶. IP-fjarskipti ehf. (Tal) sells mobile phone service at the retail level but does not operate its own network. Company frequency rights vary somewhat, but the three largest, Siminn, Vodafone and Nova all currently have been allocated frequency rights in the three frequency rights used for GSM and 3G (UMTS) services. The Nova frequencies on the 900 and 1800 frequency bands are however smaller than those of Siminn and Vodafone. Table 2.1 shows an overview of frequency rights on the market and the years in which they were allocated. Siminn has in addition rights to use frequencies for NMT services.

Table 2.1 Overview of UMTS and GSM frequency rights of mobile phone companies

Company	900 GSM/3G	Issued	1800 GSM	Issued	2000 3G	Issued
Síminn	28 MHz	1994	30 MHz	1998	35MHz	2007
Vodafone	30 MHz	2001	49,6 MHz	2000	35MHz	2007
Nova	10 MHz	2007	14,8 MHz	2009	35MHz	2007
IMC Ísland			5,6 MHz	2000		

Source: PTA

34. Siminn has provided mobile phone service since 1986, when NMT mobile phone service was introduced. Siminn is the only company that offers and has a licence for NMT service. The NMT network reaches the whole population and is accessible both in the highlands and in the seas around the country. Siminn began offering GSM mobile phone service in 1994 and has built up its own distribution system which reaches 98% of the population. Siminn has frequency rights for GSM services both on the 900 and 1800 frequency bands. In 2007 Siminn was allocated frequency rights for UMTS mobile phone service and began developing a UMTS network. Siminn is the largest electronic communications company in Iceland and offers general electronic communications services. The company previously had a sole licence for electronic communications services and was in state ownership up until 2005. In 2007 the operation of Siminn's base network was put in a separate company, Míla ehf. Despite this separation the companies are still closely linked as they are both members of the same conglomerate. Siminn and/or Míla have been designated as having significant market power on most of the markets that have been analysed by PTA.¹⁷

35. Vodafone was founded in 2003 with the merger of Halló! Frjáls fjarskipti, Íslandssími hf. and Tal hf. Before this, Íslandssími and Tal offered GSM mobile phone service, Tal from 1998. Vodafone offers GSM mobile phone service that reaches about 98% of the population, mostly through its own distribution system, and apart from that through a roaming agreement with Siminn. Vodafone has from the outset had frequency rights on the 900 and 1800

¹⁶ The PTA decision in question has been appealed to the Appellate Committee for Electronic Communications and Postal Affairs but the decision has not yet been pronounced.

¹⁷ See overview of market analyses on the PTA website:

http://www.pfs.is/default.aspx?cat_id=11&module_id=210&element_id=1691

frequency bands. Vodafone was allocated UMTS frequency rights in 2007 and offers UMTS service, but shares a UMTS network with Nova.

36. Nova was allocated UMTS frequency rights at the end of March in 2007 and began offering mobile phone service shortly before the end of that year. Nova only offers third generation mobile phone service. Vodafone and Nova have made an agreement on reciprocal sharing of systems, which is such that Vodafone can offer its customers full UMTS services in such a way that Vodafone has its own exchange and only uses Nova's transmitters. In return, Nova customers roam domestically in the Vodafone system should they leave the Nova catchment area, where they only receive 2G service. Nova was allocated rights in 2007 to use 10 (2x5) MHz on the additional band on the 900 frequency band. In July 2009 the company was allocated rights to use the GSM 1800 frequencies.

37. IMC Ísland ehf. has had a mobile phone licence (DCS 1800) since 27 June 2000. The company has installed transmitters at Akureyri, Egilsstaðir, Eskifjörður, Neskaupsstaður, Reyðarfjörður, Saudárkrókur and Húsavík. The above-mentioned frequency licence expires on 27 June 2010 but the company has applied for an extension of the frequency licence and this application is currently being processed by the PTA. IMC operations have until now been mainly based on international roaming services for foreign users and the company until now placed little emphasis to date on gaining domestic customers. IMC did however make an international roaming agreement a few years ago with Vodafone in order to be able to offer its customers services in most of the country. Users on the IMC network in this country have been very few. In the previous PTA analysis of the market in question it was the opinion of the PTA that IMC's mobile phone network was still too small to have any significant impact on the analysis of the market in question. In this connection the PTA stated that termination in the IMC network as a proportion of total number of minutes having their origin in domestic networks was about 0.1% in 2005. In the light of this the PTA did not consider it necessary to further analyse IMC's position in the market in question for the time being. So IMC was not designated as having significant market power on the market in question and obligations were therefore not imposed on the company. IMC was thus not an active participant on the Icelandic mobile phone market for a long period. Now the outlook is improving. The company has announced major development and investment in its mobile phone network in Iceland and it made a roaming agreement with Siminn on 29 November 2009 for access to that company's distribution system. According to the above roaming agreement, IMC can transfer its rights and obligations according to the agreement to its sister company, Alterna Tel ehf. (Alterna). Alterna launched a major marketing campaign on the Icelandic mobile phone market in April 2010 with opening of a retail outlet and with an advertising campaign and the opening of a retail outlet, after a few months of testing. According to the above roaming agreement plans allow for IMC/Alterna¹⁸ gaining a significant market share on the Icelandic mobile phone market in the coming years. It is thus clear that the position of IMC has changed considerably from the previous market analysis.

38. The company Icecell ehf. was allocated frequency rights for the GSM1800 frequency band at the end of June 2007. As stated previously the company has not yet started to develop a mobile phone network and offers no mobile phone service in this country to date. When the PTA published its first draft last October it was not clear when or whether the company would develop its mobile phone network and thus it was not possible to include it as one of the companies on the market in question at that point in time. Nor did the PTA consider it likely that the company would be a significant operator on the termination market during the

¹⁸ The PTA views the companies as one economic unit in the understanding of competition law.

estimated period of validity of this analysis, even if it commenced development of a network soon. The PTA thus considered there to be no need to examine IceCell's position particularly in this analysis at that point in time. With Decision no. 5/2010 from last 11 March, the PTA cancelled IceCell's frequency licence on the grounds of breach of the conditions of the licence, among other things with regards to distribution requirements. This decision has now been appealed to the Appellate Committee for Electronic Communications and Postal Affairs but the ruling has not yet been announced. The PTA considers there to be even less reason now than when the preliminary draft was published to make a special examination of the company's position in this market analysis.

39. As stated above, Siminn operates both an NMT mobile phone network and a GSM/UMTS mobile phone network. The NMT mobile phone network is the only analogue mobile phone network in Iceland. The NMT network covers almost the whole country and the seas surrounding it. The NMT network more limited services than the GSM mobile phone network and does not e.g. offer the possibility to send SMS messages. The NMT phone does however offer the same mobility as the GSM phone. The NMT network is connected to the fixed line and GSM networks and offers call termination both originating in mobile phones and fixed line. It has been on the agenda for some time to discontinue operation of the NMT network as the technology is becoming obsolete and difficult to maintain the system. The decision remains to be taken as to when operations will be discontinued. Siminn's frequency rights were last extended for one year in 2009 or until the end of 2009 with the possibility of a further extension of one year at a later date. Now the Siminn NMT frequency licence has been extended to 1 September 2010 and there is nothing on the table concerning a further extension.

40. In a previous PTA analysis of the market, NMT, GSM900 and GSM1800 mobile phone networks were all considered to fall within the scope of the relevant market. Since that analysis was made UMTS has been included in the service offer in this country. The PTA considers that this service also falls within the scope of the relevant market, as will be further detailed below.

41. Given the ESA definition then each mobile phone company has 100% market share of the termination market in its own network. Their market share of the total market for mobile phone service is however varied. Siminn has been the largest company on the mobile phone market from the outset as on most service markets in electronic communications. Siminn's market share has however diminished somewhat on the mobile phone market since the last market analysis was made. Siminn's market share by income on the retail market¹⁹ has fallen from [60-65%]²⁰ in 2007 to [50-55%]²¹ in 2009. Vodafone's share has fallen in the same period or from [35-40%]²² in 2007 to [30-35%]²³ in 2009. It should however be noted that IP fjarskipti ehf. (Tal)²⁴ which had [0-5%]²⁵ market share in 2009 does not have its own network and operates solely as a reseller.²⁶ The company has made reselling agreements with Vodafone and Siminn, but buys wholesale services exclusively from Vodafone for the time

¹⁹ This is total income less interconnection charges (i.e. termination charges).

²⁰ Deviation band included for reasons of confidentiality.

²¹ Deviation band included for reasons of confidentiality.

²² Deviation band included for reasons of confidentiality.

²³ Deviation band included for reasons of confidentiality.

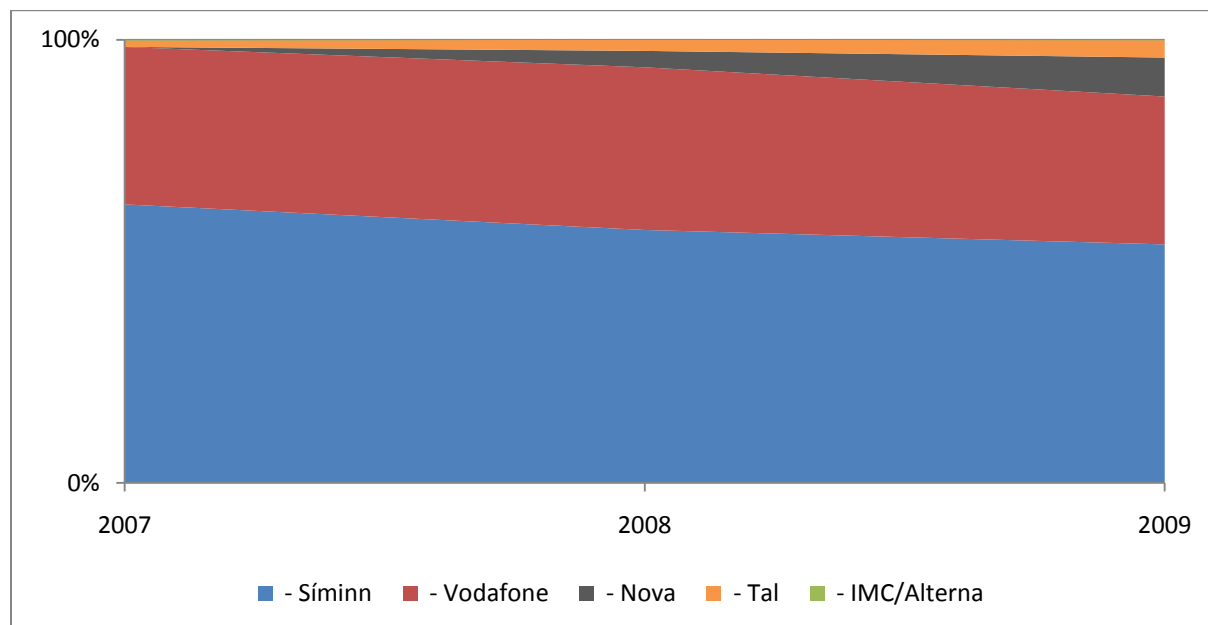
²⁴ This also applies to SKO until 2008 in which year the companies merged.

²⁵ Deviation band included for reasons of confidentiality.

²⁶ Service Provider.

being²⁷. Nova, that commenced operations at the close of 2007, has gained a [5-10%]²⁸ share during this period, reckoned by retail income on the mobile phone market.

Figure 2.1 Market share - developments of income in the mobile retail market, 2007 – 2009²⁹



Source: PTA

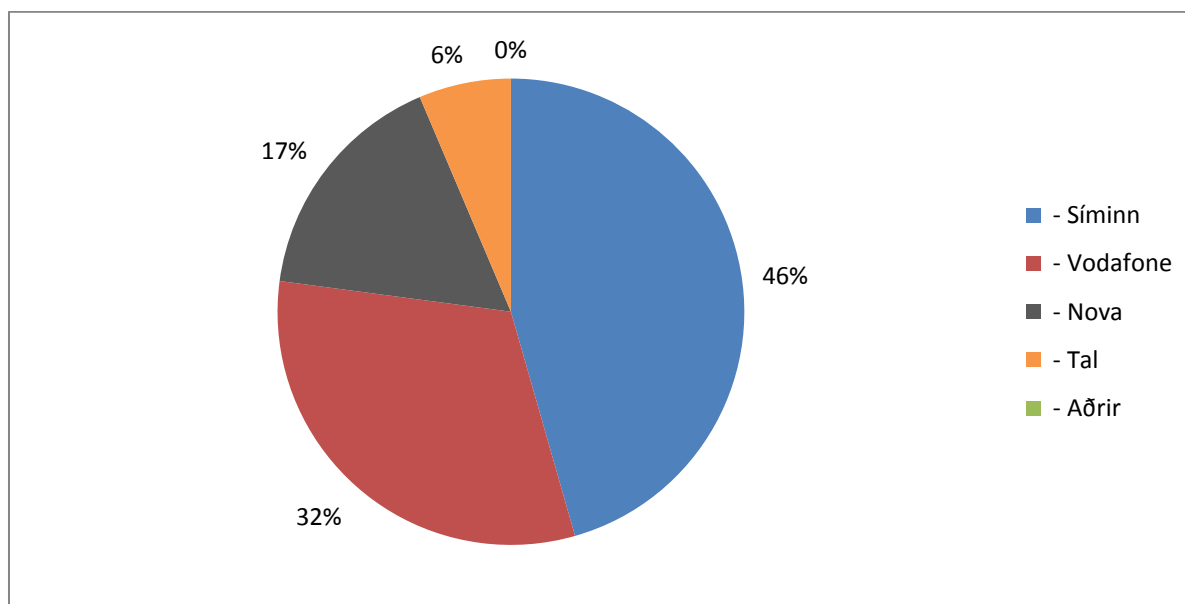
42. There have been some changes in the number of customers and they have fallen at Síminn and Vodafone while they have risen at Nova and Tal, as these two companies recently entered the market. Figure 2.2 shows the division between telephone companies by number of customers. At the end of 2009 Síminn had a 46% share, Vodafone had about 32% and Nova had 17%. Others had less.

²⁷ IP Fjarskipti is 51% owned by Teymi hf., the parent company of Og fjarskipti ehf. (Vodafone). With the Decision of the Competition Authority dated 2 July 2009 Teymi hf. was obliged to sell its holding in Tal within a given time limit.

²⁸ Deviation band included for reasons of confidentiality.

²⁹ Deviation band included for reasons of confidentiality.

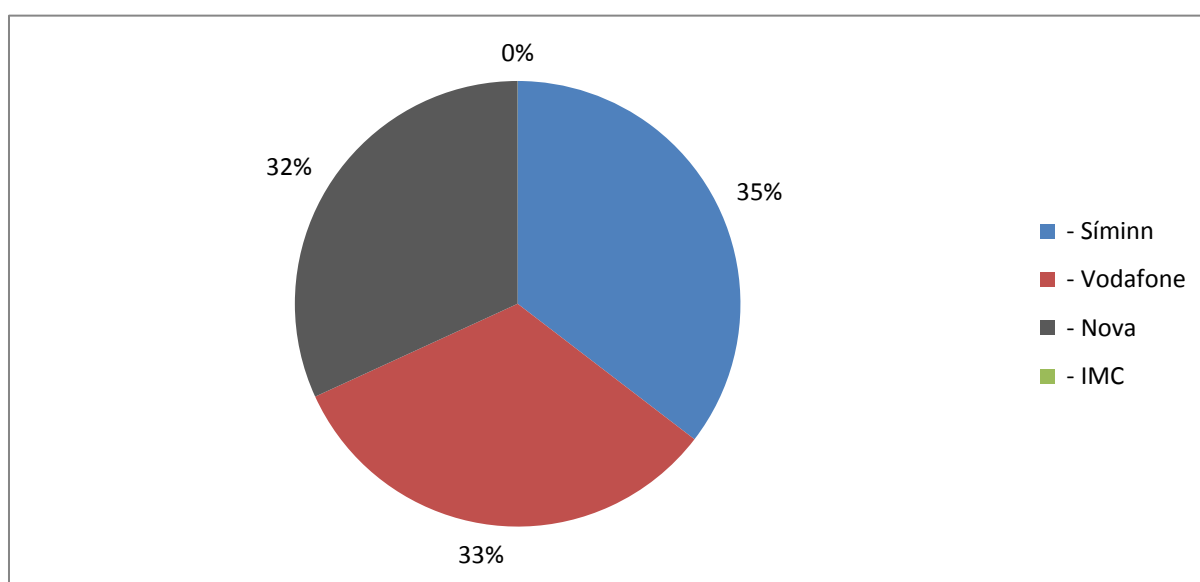
Figure 2.2 Market share - number of customers for GSM/UMTS 2009



Source: PTA

43. If on the other hand one looks particularly at the market for termination, then total income for this market was over ISK 2.2 billion in 2009³⁰. Income is split fairly evenly between the three largest companies (figure 2.3). Síminn had the largest part of income, or 35% which is however not much more than the Vodafone share which was 33% nor that of Nova which had 32%, but as is seen in figure 2.4 there is a significant difference in total minutes within each system.

Figure 2.3 Market share – termination income GSM/UMTS 2009 (external sales)

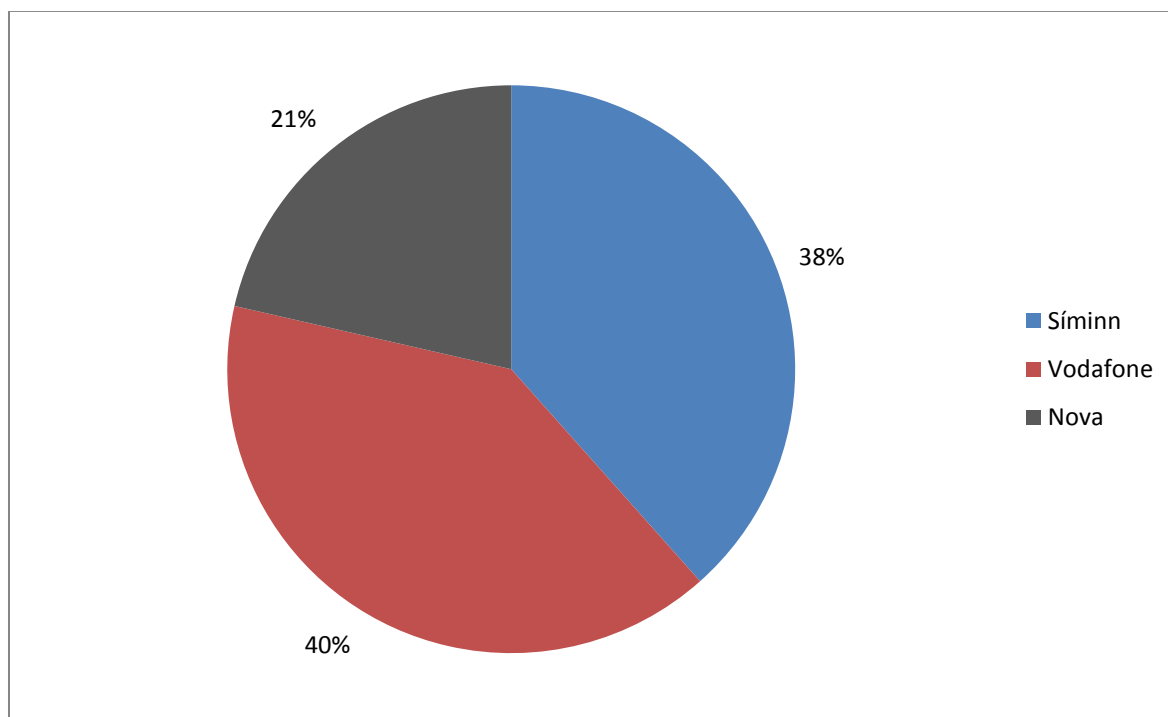


Source: PTA

³⁰ Source, the PTA

44. Siminn's share of total termination minutes has fallen from 54% to 38% during the period 2006-2009. Vodafone's market share on the other hand increased steadily until 2009 and is now larger than Siminn's market share. The entry of Nova into the market in 2008 caused the amounts for Siminn and Vodafone to diminish between 2007 and 2009 despite the fact that traffic as a whole increased between the years referred to here. Nova's market share is larger by income but not by traffic because it has a much higher termination charge than Vodafone and Siminn. The PTA however assumes that the existing difference in market share, whether by traffic volume or by income, will decrease steadily as the PTA plans to take measures to achieve symmetry in termination prices in the next 2-3 years. The PTA does not expect that the entry of new parties into the market will have much effect on the wholesale market for termination in the near future.

Figure 2.4 Market share - termination in minutes by company for 2009



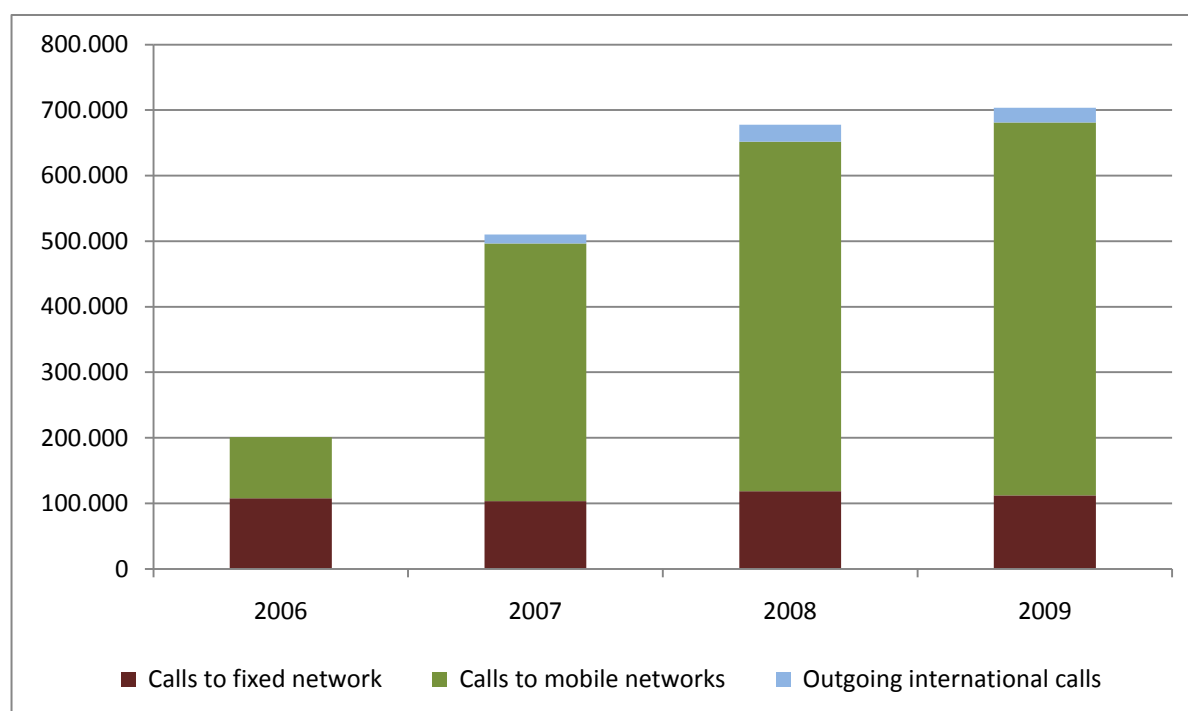
Source: PTA

2.2.2 Development of demand

As is shown in figure 2.6 the number of users of mobile phone services increased steadily until the close of 2009. The number of minutes in mobile phone networks has also correspondingly increased in recent years, though there was some deceleration in 2009, and in figure 2.5 one can see an increase in the number of minutes for the period 2006-2009.

45.

Figure 2.5 Number of minutes from GSM/UMTS mobile phones, 2006 – 2009



Source: PTA

46. Increase in income from mobile phone service has been less in recent years than the increase in users and in traffic. That can be seen in table 2.2 here below. The explanation for this could lie in increased competition where a large volume of free minutes is on offer.

Table 2.2 Total income by type of electronic communications activities, 2006 – 2009

Í lok árs / End of	2006	2007	2008	2009
Í milljónum króna / In millions of krónur				
Samtals / Total	33.082	39.665	42.616	43.140
- Fastanetið / Fixed network	7.713	12.270	13.870	12.941
- Farsímarekstur / Mobile network	15.473	16.250	16.795	16.728
- Gagnafl. og Internet þjón.	7.017	7.086	6.968	7.566
- Aðrar tekjur / Other income	2.879	4.059	4.984	5.905

Source: PTA

47. Real market growth was not great from 2007. It should however be kept in mind that registered users are more than the total population of the country and that in the first months of 2009 more people left the country and fewer came to the country than in past years.³¹ It is thus not at all certain that conditions exist for further growth in the near future.

48. The use of NMT service has shrunk considerably from 2006. The probable reasons among other things are that there is little offer of phones, limited user possibilities and news of pending closure of the service. Another reason is without doubt the greatly increased distribution of GSM services with the arrival of transmitters with a wider range. The number

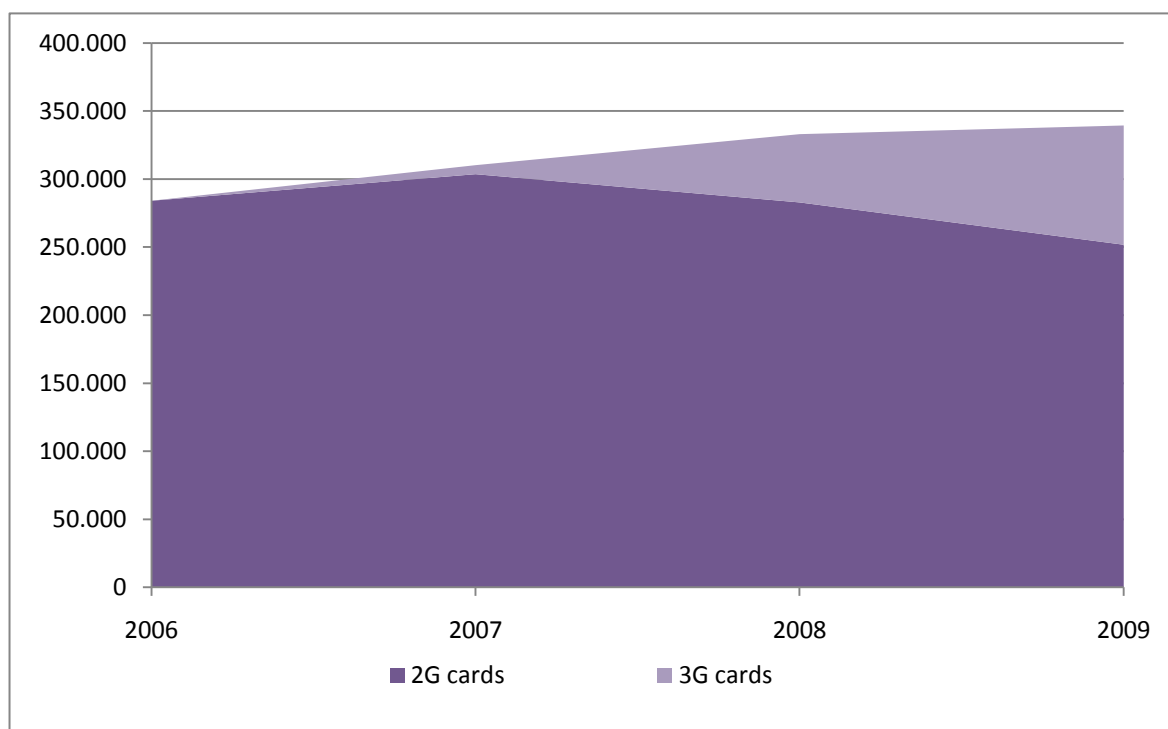
³¹ See press release for Statistics Iceland no. 141/2009 21 August 2009:
<http://www.hagstofa.is/Pages/95?NewsID=4018>

of subscribers in MMT service has shrunk from 19,489 in 2006 to 9,783 in 2009.³²

2.2.3 The development of supply

49. As was stated in Chapter 2.2.1, mobile phone companies have increased since the last analysis was made in 2006. Another change in the mobile phone market is the introduction of UMTS service in 2007. Siminn, Vodafone and Nova have all offered UMTS service since the latter half of 2007. Users that solely use GSM service are still more numerous than users of UMTS, but the number of UMTS cards is increasing steadily. Figure 2.6 shows the number of UMTS and GSM cards for the years 2006-2009.

Figure 2.6 Number of active cards in the GSM and UMTS mobile phone networks, 2006 – 2009



Source: PTA

50. With the third generation of mobile phone, a totally new service has not entered the market with new subscribers as was the case when GSM entered the market and replaced NMT. There has not been a commercial division of the market but rather the calls are sold on the same subscriber terms, as well as conditions, presentation, marketing and pricing of base service is the same whether it is provided over a third generation network or second generation. What is however happening is technical replacement of network systems of which the customers are not necessarily aware. From the customers' point of view, new possibilities are added, such as television by mobile phone and it is easier to view web pages than before, but the price of data transfer through a mobile phone is the same. The customer is however quicker to use more data than before. The customer with a UMTS card uses GSM service in the areas not reached by UMTS networks. In voice transfer the user cannot discern any difference in using GSM or UMTS.

³² Source: PTA

51. The pricing of GSM and UMTS is the same, both at the retail level and wholesale level. The price for call termination in individual networks is thus the same in both instances.

2.3 PTA definition of the relevant markets

2.3.1 Introduction

52. In its analysis of Market 16 that was published in its final edition on 20 July 2006, the PTA defined a market for call termination in individual networks. This definition was based on the definition in the ESA recommendation then in force, with reference to the explanatory note to the ESA recommendation then in force. As stated in Chapter 2.1 above, the definition of this market is unchanged in the new ESA recommendation. The new ESA recommendation therefore does not call for changes to the PTA's previous definition. The following chapters deal with how the PTA considers proper to define the market in the circumstances prevailing in this country. The discussion is very similar to the corresponding discussion in the previous analysis, but takes into account the supply of new services and the entry of new parties into the market.

53. There are two things that most influence definition of the relevant market. In the first case there is the fact that only the mobile phone network operator himself can provide termination of calls within his own network (monopoly of termination of calls in his own network) and demand at wholesale level is totally bound to supply as the mobile phone company of the user making a call has no option but to buy termination from the mobile phone company providing termination and as the situation is today the users of that company would normally have little interest in influencing prices as they do not pay for termination of call to themselves, but rather it is the caller who pays for termination (CPP principle).

54. In accordance with the conclusions of the ESA it is the view of the PTA that the above-mentioned factors make it important to consider whether another manner of communication, on both supply and demand sides, would be more effective in exerting control on the pricing of termination. The PTA uses the SSNIP test to support this view. In assessing substitutability the first step is to examine the retail market before defining the wholesale market.

2.3.2 Assessment of substitutability in demand at the retail level

55. At retail level the behaviour of the caller and of the recipient are assessed, in the light of small but significant and persistent increase in termination rates.

2.3.2.1 The reactions of the caller to small but significant and persistent price increase

56. If the caller reacts to a small but significant and persistent price increase by changing his manner of communication, there could be reason to take that substitutability into the market definition. Here it is assumed that price reduction results in a change in user habits of the caller, which will mean that the price increase is unprofitable.

57. In order to react to small but significant and persistent increase in termination rates with a change in manner of communication the caller must:

- Know that he is calling a mobile phone in an individual network,
- Know what it costs to call in the relevant mobile phone network and
- Be aware of the increase in termination charge in order to have the option of choosing

another manner of communication, even though they are different are technically unlike normal mobile phone telephone calls.

58. In addition the increase in termination rates must be patently obvious in the retail price for the relevant network. This is actually not always the case as the price of a telephone call is not divided such that it is possible to see the part attributed to the termination charge. This means that it should be considered unlikely that an increase in termination rate in an individual network will lead to a reduction in the number of callers outside that network calling into it. In those cases where there is the same retail price for telephone calls in more mobile phone networks then the increase in termination rate will probably not be visible to the end –users and will appear an increase in retail price for all calls from outside the relevant network. When this occurs it is likely that the increase in termination rate will influence user calling habits.

59. Despite the above the PTA considers it appropriate to examine what other forms of communication could come in place of telephone calls in a mobile phone network. It is assumed that a sufficient number of callers know which network their call is going to and what it costs and that they are also aware of the termination rate for the call. In this connection the PTA considers it appropriate to examine the following forms of communication:

- Call by fixed line phone rather than mobile phone.
- Call between two mobile phones in the same network instead of call between two mobile phones in different networks or from a fixed line phone to a mobile phone
- SMS instead of a call
- Short call with request for call back
- Telephone calls with VoIP instead of mobile phone calls

Call by fixed line phone rather than mobile phone.

60. It is conceivable that users would react to high termination rates for telephone calls by mobile phone by calling a fixed line where the termination rate is lower. The PTA can imagine several scenarios where a call to a fixed line is tried first, before calling the mobile phone. The PTA however believes that such a substitute is not widespread because the aim of calling a mobile phone is to reach the subscriber wherever he is located, without regard to whether he is near a fixed line. This option is then in many cases insufficient. As a result the PTA considers that telephone calls from a fixed line phone can only to a limited degree replace telephone calls from mobile phones. The substitutability effect of fixed line phone calls is considered too small to be included in the definition of the relevant market.

Call between two mobile phones in the same network instead of call between two mobile phones in different networks or from a fixed line phone to a mobile phone

61. A call between two mobile phones in the same network is usually cheaper than a call between two mobile phones in different networks or from a fixed line phone to a mobile phone. It is conceivably possible that termination rate increase that leads to an increase in retail price could lead to a decision by the caller to rather use a mobile phone connected to the same network as the intended recipient. If a telephone call in the same mobile phone network should replace a call between two distinct mobile phone networks then this demands that the caller or the recipient have more than one mobile phone subscription, such that it is possible to choose the subscription that leads to a lower termination rate. It should however be kept in mind that some mobile phones are locked for access to mobile phone networks other than those they were initially sold for, i.e. it is not possible to use SIM cards from other companies

in the phone in question. This option is complex and it should be considered unlikely that many users will have more than one mobile phone subscription. Thus it should be considered that substitutability between telephone calls in the same mobile phone network and calls between distinct networks is insignificant and will not have a significant effect on termination pricing on telephone calls in mobile phone networks.

SMS instead of a mobile phone call

In some cases SMS can replace a phone call. Particularly for short calls that do not need to take place at specific times. Against this there is the possibility that the message will be delayed, the number of characters in the message is limited and there are indications that the market sees SMS rather as a substitution service for telephone calls. The PTA considers that SMS does not substitute telephone calls sufficiently to make small but significant and persistent increase in termination rates for telephone calls unprofitable. Possible substitutability is not considered sufficient reason to include SMS in the definition of the relevant market.

Short call with request for call back

62. Such calls are not new and there is no proof that they affect termination rate of telephone calls. It must be considered that such calls are mainly used by the younger generation in order to transfer the cost of telephone calls to others, usually to parents, so such calls do not affect the end cost of telephone calls.

Telephone calls with VoIP instead of mobile phone calls

63. The use of VoIP service on the Internet has increased greatly recently, particularly in connection with international calls. Telephone calls using IP technology are made by calling through the Internet variously from one computer to another or from a computer to a fixed line phone or mobile phone. There are also wireless Internet phones on the market that offer users the possibility of connecting through WiFi with the Internet to make a call.

64. When a call is made from one computer to another then both the caller and the recipient need to be connected to the Internet and have computers with compatible software, headphones and a microphone, to be able to have a conversation. The advantage when calling from one computer to another is that one only pays for the Internet connection and download where applicable, and not for the call itself. When calling from a computer to a fixed line phone or mobile phone then one pays in most instances for the telephone call according to a specific price list that is based on price per minute.

65. It is normal to consider whether VoIP telephone calls, mainly from one computer to another, can replace telephone calls through mobile phones if the cost of such calls was to increase (because of increased termination rate). The main argument against this is mobility which also applies to calls to fixed line phones instead of mobile phones. The gain is that with mobile phone telephone calls it is possible to reach the recipient wherever he is located. This criterion can change with further development and distribution of the Internet and of wireless Internet phones, which have not achieved any significant distribution in this country. As the situation is today, the PTA considers that VoIP service does not create competitive pressure on termination rate from mobile phone telephone calls. The main reasons are that VoIP has not achieved wide distribution and is still under development. It is most attractive to use VoIP when calling from one computer to another because of the low cost but that requires that the intended recipient is on-line when the call is made. There are thus still many barriers to there being a case of real substitutability.

66. With the above in mind the PTA assesses that telephone calls using IP technology do not provide termination pricing with competitive control to any significant degree and that termination does not substitute telephone calls in mobile phones at present.

Summary and conclusions

67. Various forms of communication are candidates for possible substitutability for telephone calls between mobile phone networks. Telephone calls within the same mobile phone network can conceivably be substitution service, i.e. if the user is fully aware of the mobile phone network he is calling to. Number transfer between mobile phone networks was first enabled in October 2004 but up to that time, users could usually work out the mobile phone network they were calling to. After number transfer was enabled it became more difficult to work it out. The PTA considers that in most instances it does not make much difference whether the user knows what mobile phone network he is calling to as user price awareness is not sufficiently high to create a situation that makes small but significant and persistent increase in termination rates unprofitable. Therefore the conclusion must be drawn that telephone calls within the same mobile phone networks are not a realistic substitution service for telephone calls to other networks.

68. It is therefore the conclusion of the PTA that there is no other form of communication that can provide sufficient substitutability for calls in mobile phones such that the total effect of small but significant and persistent increase in termination rates would be unprofitable. This conclusion is based among other things on the fact that demand for telephone calls seems to be non-elastic in this country as user price awareness has been low and that the cost of call termination between networks is not transparent, particularly after number transfer became active. The market being examined here will not then cover other forms of communication and this is in harmony with the conclusions of the ESA.

2.3.2.2 Telephone call recipient reactions to small but significant and persistent price increase

69. If the recipient reacts to small but significant and persistent increase in termination rates by replacing telephone calls with another form of communication, then this could be a reason for including such forms of communication in the market analysis. Here it is assumed that price increase changes the form of communication used by the recipient and leads to the price increase being unprofitable.

70. As has been stated above, the CPP principle has the influence that increase of the termination rate does not in general affect the recipient, as he does not pay for the call. In the light of this one may assume that it would require a lot for the recipient to change mobile phone company because of its increase in termination rate. It is however conceivable if the increase meant that the recipient received fewer calls than before. The PTA considers that all the following criteria need to be met for the increase to have this effect:

- A sufficient number of recipients change mobile phone company if it becomes more expensive to call them because of termination rate increase.
- The caller is aware of the cost of termination of the telephone call.
- The caller knows what mobile phone network he is calling and knows the cost of termination of the telephone call in that network and

- The recipient of the telephone call knows that the caller is aware of the cost of termination of the telephone call, of the mobile phone network he is calling and the cost of the telephone call.

71. As stated before the PTA considers that mobile phone users are generally not aware of which mobile phone networks they are calling nor of the cost of termination. Equally one can conclude that few recipients are concerned about the cost of termination in their own networks as they do not have to bear the cost of termination. The result of this is that the recipient will generally not react to small but significant and persistent increase in termination rates in his own mobile phone network by changing his form of communication or by changing mobile phone company. This would probably also apply where other forms of communication were available.

72. In this connection it can be noted that Nova has achieved 17% market share by number of customers in a relatively short space of time, or from December 2007 until the end of 2009. The company's customers do not seem to be concerned that termination rate in the Nova network is considerably higher than that of Siminn and Vodafone.

73. With the above in mind the PTA considers that there is not sufficient substitutability on the demand-side from recipients of telephone calls and that there is no real substitutability on the demand-side at retail level to influence termination pricing in mobile phone networks or on the definition of the relevant market.

2.3.3 Assessment of substitutability in demand at the wholesale level

74. There is a direct link between demand at retail level and wholesale level. If a user requests a call to a party in an individual mobile phone network then his mobile phone company has no alternative but to buy termination from the recipient user's mobile phone company. In the light of this the PTA considers that substitution service is not available at wholesale level.

75. It is technically possible to terminate a telephone call in another mobile phone network such that high termination rates are avoided. This can be achieved e.g. by one mobile phone company buying termination from another through a corporate subscription. Here it is assumed that the minute charge is lower for companies than for individuals. the PTA considers however that it is likely in such a case that the mobile phone company providing termination would try to prevent this. It is therefore the conclusion of the PTA that in practice, such attempts to terminate telephone calls by other means would not be sufficiently successful to contribute to small but significant and persistent increase in termination rates being unprofitable.

76. The method is also known where an electronic communications company re-routes mobile phone traffic, in order to avoid paying higher charges for termination. There have been instances in this country where mobile phone traffic from one company to another has been re-routed through a foreign electronic communications company in order to pay lower termination rates. Such behaviour on the market has only lasted for a limited period of time and has had limited effect, as one can consider it likely that such a measure is only profitable while there is some kind of price error in pricing of termination. With the above in mind the PTA considers there to be no reason to take this particularly into account in the definition of the relevant market.

2.3.4 Conclusions on substitutability in demand

77. With the above in mind the PTA concludes that there are no feasible substitutes on the demand-side that would warrant a broadening of the definition of the relevant market. This conclusion harmonises with the conclusions of the ESA.

2.3.5 Assessment of substitutability in demand at the retail level

78. Substitutability on the supply-side at retail level demands that mobile phone companies that do not offer termination in individual mobile phone networks, can begin to offer this service if the mobile phone company of the recipient increases its termination rate. In order for this to be realistic then those companies need among other things to have access to information on the SIM card of the recipient.

79. As things are today it is only the mobile phone company that issued the SIM card that has access to this information. Other mobile phone companies therefore need permission from the mobile phone company in question to get access to the information. The PTA does not consider it realistic to expect this information to be available as this would reduce the income of the mobile phone company that has termination of the telephone calls. The PTA considers therefore that realistic possibilities of substitutability are not available on the supply-side at retail level.

2.3.6 Assessment of substitutability in supply at the wholesale level

80. Substitutability on the supply-side at wholesale level demands that other companies can begin offering termination at wholesale level for calls to specific end-users if their mobile phone company increases termination rate.

81. As was stated in Chapter 2.3.5 only the mobile phone company of the recipient has access to information on the his SIM card and this information is necessary for offering the termination in question. This also applies to service at wholesale level. This means that substitutability in supply at wholesale level is not available.

2.3.7 Conclusions on substitutability in supply

82. It is the conclusion of the PTA that substitutability in supply for termination in the wholesale market or in the retail market is not available that would warrant a broadening of the definition of the relevant market. This conclusion harmonises with the conclusions of the ESA.

2.3.8 Further on market definition

83. With the above in mind there is no other form of communication available in supply or demand that should be included in the relevant market definition. According to this it seems appropriate to define the market as supply of call termination at wholesale level to a specific party or telephone number. The PTA is however of the opinion that such a definition would be too narrow, as the opportunities of mobile phone companies to discriminate in termination rates to users in their networks are very limited. Termination rate is the same for all and should a mobile phone company treat price conscious customers preferentially then this would normally be done in another manner than by reducing termination rate, e.g. with discount terms on retail price of calls to certain numbers. It is thus the view of the PTA that the relevant market should cover termination of all telephone calls in each and every mobile phone network through interconnection, regardless of whether a call originates from another mobile phone network or from a fixed network.

2.3.9 SMS

84. It is proper to examine whether termination of SMS should be part of the same market as call termination. The Commission and ESA consider that call termination on the one hand and termination of SMS on the other are in separate markets.³³

85. If there was substitutability between termination of SMS and telephone calls it would be possible to view termination of SMS as part of the market for call termination. As was stated in Chapter 2.3.2 the PTA conclusion was that despite there being substitutability between SMS and telephone calls in certain instances that SMS would not replace telephone calls to such an extent to make small but significant and persistent increase in termination rates unprofitable. Equally it is unlikely that termination of SMS provides any control on pricing for call termination as it is the same party that provides termination for both, and thus little chance that he will underbid himself.

86. The question whether SMS is part of the relevant market depends on whether it is a substitution service for telephone calls and can provide control of termination pricing. If a mobile phone company decides to increase its termination rate then that could lead to a reduction in the number of termination minutes if users react to the increase by sending SMS instead of calling. The following criteria need to be fulfilled in order to expect such a reaction.

- The increase in termination rate needs to be seen in higher price to users.
- If the price to the user is to be increased, then the user needs to know a) which mobile phone network he is calling and b) what it costs to call the relevant mobile phone network (which again depends on the termination rate).
- The call needs to be of such a nature that it is possible to use SMS instead.

87. It is not given that the price to the end users will increase when the termination rate increases. It is thus not possible to assume that the first criterion will always be fulfilled.

88. It is conceivably possible to send an SMS instead of calling if a higher termination rate leads to a higher retail price but one must consider that this will exert limited control on termination rate in practice, as there is insufficient user price awareness and a lack of transparency in pricing.

89. Regarding the third criterion then the call must be first and foremost short (and to a person the caller knows) in order to be able to replace the call with an SMS. In the light of differing usage possibilities it has to be considered that only in a limited number of instances can a call be replaced with an SMS.

90. The PTA considers that it makes no difference for the termination of a telephone call and SMS if their access and origination is sold together in a package. This is mainly because it is the party that calls that has to pay for termination but on the other hand it is the recipient that chooses the mobile phone network where the termination takes place. The decision on whether to make contact using a telephone call or SMS is made by various users at differing times, but termination is dependent on the other hand on separate purchases of other users of mobile phone service and not part of a specific package. The caller does not decide with his mobile phone subscription to buy termination from one party in the same manner as he

³³ See notes to the Commission recommendations from 2007, pages 42 and 44.

chooses with his subscription to buy access and origination from one party at a specified price both for voice calls and SMS.

91. There is a considerable difference between termination of telephone calls and SMS, which indicates that they do not belong to the same market. SMS service is not possible in the NMT mobile phone network and was not possible in the fixed line phone network until 2005 when Siminn began to offer this service for fixed line phones. Previously it had been possible to send SMS from computers. SMS service is additional service that came long after voice call services commenced through mobile phones. Pricing of SMS and telephone calls from mobile phones is in addition different, with payment being made for each sent SMS while voice call traffic is charged by the minute. In addition to this the termination of SMS is agreed on especially in interconnection agreements.

92. There is also a technical difference between voice calls and SMS as SMS is not based on the same real time as telephone calls and thus it is possible to use other methods of termination for SMS. In addition, SMS and telephone calls are by nature differing methods of communication and fulfil varying needs.

93. The PTA concludes that circumstances on the market have not changed in the case of SMS since the previous market analysis was made and the PTA therefore considers that as before there is insufficient substitutability between call termination and SMS in GSM mobile phone networks to create control pricing of termination for telephone calls in mobile phones. The PTA therefore concludes that termination of SMS does not fall within the scope of the relevant market. The PTA will however carefully monitor developments in termination of SMS and if necessary the PTA will assess whether a distinct market should be defined for termination of SMS.

2.3.10 Third generation mobile phone service

94. Since the last market analysis was made of the termination market, UMTS (3G) service has entered the market in this country. As stated in Chapter 2.2.3, this service is closely linked to GSM service and in the case of call termination there is little or no distinction made between UMTS and GSM. GSM and UMTS are sold on the same discount terms and conditions; presentation marketing and pricing of base service are the same. The customer with a UMTS card uses GSM service in the areas not reached by UMTS networks. In voice transfer the user cannot discern any difference in using GSM or UMTS. There is no difference in pricing of UMTS and GSM service, including termination service, neither at the retail level nor at the wholesale level.

95. The PTA considers that call termination with UMTS technology belongs to the same market as termination of GSM calls. In the cases where companies offer both UMTS and GSM service the services are so intertwined that one must consider that termination of calls in the mobile phone network of the company in question belong to the same market regardless of whether they are made with UMTS or GSM technology.

2.4 Conclusion regarding definition of service markets

96. The PTA concludes that the relevant service market is in accordance with the recommendations and conclusions of the ESA. Sufficient substitutability for call termination in mobile phone networks can neither be found in demand nor supply on the retail or wholesale markets, to influence this conclusion. Existing technology does not offer call termination in mobile phones by other mobile phone companies than the one of the recipient.

It is unlikely that this will change in the near future. Nor do there seem to be other realistic options for users at retail level that would exert control on call termination in mobile phone networks.

97. The relevant service market thus covers call termination in individual networks. The mobile phone networks included are UMTS, GSM 900 and 1800 and NMT 450. As has been stated previously there are four companies in Iceland that offer call termination in their own networks, IMC Ísland, Nova, Siminn and Vodafone.

98. In light of the foregoing discussion, the PTA defines the following service markets:

- Voice call termination in Siminn's GSM/UMTS mobile network.
- Voice call termination in Siminn's NMT network.
- Voice call termination in Vodafone's GSM/UMTS mobile network.
- Voice call termination in Nova's UMTS network.
- Voice call termination in IMC Ísland's GSM network.

3.0 Geographic demarcation of the relevant market

99. The relevant geographic market includes the area where the undertakings in question are involved in supply and demand for the relevant product or service and where competitive conditions are similar or to such an extent homogeneous that it is possible to distinguish the area from neighbouring areas where prevailing competitive conditions differ significantly. In assessing proxies on the demand side it is right to take into account customer taste and the geographic purchasing patterns of the customers. The traditional definition of a geographic market in the field of electronic communications is determined with reference to the extent of the electronic communications network in question and to the legislative jurisdiction of the regulatory framework applying to the relevant market³⁴.

100. Mobile phone networks that are used for call termination are demarcated geographically by Iceland. Iceland is the jurisdiction to which the Electronic Communications Act, no. 81/2003, applies. The general operating licenses issued to electronic communications companies extends to the entire country as is also generally the case with frequency rights for mobile phone service. Today Siminn's GSM network covers the entire country or about 98% of the population and Vodafone also provide mobile phone service to about 98% of the population, mostly through their own GSM network and otherwise through a roaming agreement with Siminn. The Nova mobile phone network covers the capital city area and the south west peninsula, in addition to Snæfellsnes, Eyjafjörður and Húsavík. The IMC Ísland mobile phone network is smaller than the others and today the company has radio transmitters at the following locations: Akureyri, Egilsstaðir, Eskifjörður, Neskaupsstaður, Reyðarfjörður, Saudárkrúkur, Húsavík, Höfn and Ísafjörður. IMC Ísland has also made an international roaming agreement with Vodafone and a domestic roaming agreement with Siminn³⁵ that gives IMC users the possibility to roam in the Siminn and Vodafone mobile phone network. The IMC mobile phone system, as per 27. 27 June 2000, is limited geographically and reaches a few urban clusters in the north and east of the country. The IMC frequency license expires on the coming 27 June but the company has applied for an extension and the application is being processed by the PTA. The PTA informed IMC by letter dated 10. May 2007 that it considered it appropriate to open the company's frequency license so that they would be unlimited geographically. The company did not answer this letter from the PTA. One could thus say that the company has had the offer of a frequency license that covers the whole country since 2007.

101. It should be considered that competition conditions for call termination in mobile phone networks are basically the same for the entire country. Termination rates do not vary depending on the geographic location of the user in this country. The service is equivalent everywhere in the country, as the relevant market only covers voice calls, and not data transfer which can vary by region. The PTA is thus not aware that there is a difference in conditions for competition between regions in Iceland such that the country should be divided specially into more than one area.

102. In the light of the fact that call termination in each individual mobile phone network is

³⁴ See Chapter 2.2.2 in the Guidelines.

³⁵ IMC made a roaming agreement with Siminn last 26 November. According to this agreement IMC can transfer its rights and obligations according to the agreement to its sister company, Alterna, which has launched a major marketing campaign on the Icelandic mobile phone market. This marketing push commenced with an advertising campaign and the opening of a retail outlet in April 2010, after a few months of testing.

a distinct market one can conclude that the geographic scope of each market is analogous to the scope of the mobile phone network of each mobile phone company. Then there is no substitutability between call terminations in distinct networks, not does it matter in this connection that in some areas there are more networks than in other areas of the country.

103. The PTA considers that there are no indications that the country divides into varying markets for termination in mobile phone network and the PTA therefore concludes there to be no need to make a detailed analysis of this.³⁶

104. With the above in mind the PTA considers there to be no need to demarcate the relevant market more strictly than is allowed for in the guidelines. In the light of the above the PTA considers that the geographic market for call termination in individual networks is the whole country. This also applies to the IMC network as the company has signed an extensive roaming agreement with Siminn. The company has had the offer of a frequency licence that covers the whole country since 2007 and its limited frequency licence is about to expire. It is unlikely that the PTA will reissue such a limited frequency licence.

³⁶ According to ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008 there is only a need for detailed analysis of geographic markets if the initial examination indicates that the country could be divided into different market areas.

4.0 Analysis of market for call termination in mobile phone networks (Market 7)

4.1 Introduction

105. In this Section, the relevant service markets are analysed on the basis of the criteria for significant market power (SMP), in order to determine whether one or more operators can be defined as having such power. The criteria that are used to measure the market power of the operators in question depend on the characteristics of each market. It is the role of regulatory authorities to assess what criteria are most appropriate in assessing market power. The analyses are based on the criteria that are discussed in the ESA Guidelines, in the regulation on market analysis from 2009 and in PTA's introductory document on market analysis from 2009.

106. In the opinion of the PTA the most important criteria in analyzing the relevant market are market share, entry barriers and possible competition, buyer bargaining power and price trends. The PTA considers that assessment of the criteria that are omitted here would not change the conclusions of the market analysis in the light of the special circumstances that the definition of the termination market creates.

4.2 Market share

107. Market share is an important criterion in market analysis. It is however not the only criterion to decide whether a company is considered to have significant market power, but it can give strong indications on whether a position of significant market power exists or not. Very large markets shares in excess of 50% do not in themselves suffice, according to legal precedent to declare that a company has a dominant position, save in exceptional circumstances. According to the Guidelines a suspicion of dominant market position does not usually arise about a single company (single dominance) before market share reaches at least 40%. This depends however on the size of the company compared to its competitors. In some cases a company with a market share under 40% can have dominant position. An undertaking with a market share under 25% would, in all likelihood, not be considered to dominate unless it were a case of collective dominance with other entities (joint dominance). Development of market share over a period of time also has significance in assessing whether a company is dominant. Should a company have a continuously high market share then this indicates a dominant position, where a fluctuating or decreasing market share points to the contrary. In new or expanding markets a high market share is less of an indicator of market strength than in mature markets or those with slow expansion.

108. In accordance with the definition of wholesale markets for call termination in individual networks, each electronic communications network is one market and thus only one mobile phone company on each market. This means that regardless of whatever criteria are used then each mobile phone company has 100% share of the relevant market.

109. The fact that each mobile phone company has 100% share of the relevant market indicates that the companies have significant market power on the wholesale market for call termination in their own networks and could to a great degree operate without consideration for their customers or other electronic communications companies.

4.3 Entry barriers

110. “Entry barriers” is a collective definition for various factors that influence a company's market strength. Where there are few barriers in a market then potential profitability is an attraction for new companies to gain market share from those already operating in the market. Potential competition from new entrants can influence the behaviour of a dominant company and lessen its damaging influence on competition. Entry barriers on the other hand weaken or prevent competition.

111. In general, potential competition from new service providers affects the behaviour of dominant companies, including pricing. Entry barriers of various kinds can on the other hand can weaken the basis for potential competition or even prevent competition.

112. Termination of a telephone call in a mobile phone network is made in the network to which the recipient is connected. There is no available technology in mobile phone networks to allow any party other than the service provider of the recipient to offer call termination. The core competition problem on this market is to be found in the fact that others cannot offer this service and that is the fundamental reason for defining each network as a separate market. If matters develop such that others can offer call termination then this would radically alter the competition environment in this market. The PTA sees however no indication that such technology will be put on the market in the foreseeable future.

113. The main principle that the party who call pays, in fact diminishes the effects of competition in the market for call termination. The reason is that the main principle means that users have no incentive to change service provider if a competitor with lower termination rate enters the market.

114. According to the above there are significant entry barriers in the market that are insurmountable in the near future. This indicates that all companies that offer call termination in mobile phone network in this country have significant market power.

4.4 Customer buying power

115. Customers with a strong bargaining position can influence competition and can limit the seller's ability to operate without consideration for customers. A strong bargaining position is mainly in place when a customer buys a large part of a seller's produce, is well informed of other offers, can switch to another seller without much cost and may even have the capacity to commence production of analogous goods/services.

116. As has been stated the definition of the relevant market is that there is only one mobile phone company on each market. Despite the fact that each mobile phone company has 100% market share on the relevant market then the market strength of each one depends on the bargaining power of customers and of the influence he can exert on the company in question. In the light of this it is necessary to assess whether and to what extent the customer's bargaining position exists on the market for call termination in individual networks and under what circumstances buyers at wholesale level and retail level can influence the behaviour of the seller.

117. On the relevant wholesale markets the buyer's bargaining position could come from operates of fixed line phone networks and from other mobile phone network operators that buy call termination in an individual network. These network operators need to buy termination from the mobile phone network operators in question in order that their customers have the option of calling customers in the mobile phone network in question.

118. Theoretically, large network operators could, e.g. fixed line phone network operators, pressurise mobile phone network operators in agreements on interconnection charges. The strongest weapon would be to threaten refusal of interconnection. In practice such a possibility is however not very realistic as a general obligation rests on electronic communications companies to agree on interconnection with networks and services of other electronic communications companies, see Article 24 of the Electronic Communications Act.

119. It is in addition possible to maintain that buyers could use wholesale prices for termination as a bargaining weapon, e.g. by threatening to raise the price if a network operator does not lower his price. In this connection it is however pointed out that the largest network operators have in most cases been designated as having significant market power and can generally not increase termination rate without the agreement of the regulatory authorities who have in many instances prescribed cost analysis of these prices. Siminn could e.g. neither raise its rates for call termination in its fixed line networks nor in its mobile phone network without the agreement of the PTA and the same applies to call termination in the fixed line networks and mobile phone network of Vodafone.

120. Siminn is the largest buyer of termination both for fixed line and mobile phone calls and Vodafone is also a large buyer of Siminn's termination service. Siminn has had by far the largest market share on the telephone market since competition began and it still had 46% market share by number of mobile subscribers in 2009 and [50-55%]³⁷ market share by retail income and over 70% of subscribers to fixed line phone services at the same time. Despite Siminn's size and market share, Vodafone did not reduce its termination rates in step with Siminn until the company was forced to following the decision of the PTA on 20 July 2006 (M16).

121. Nova, who has been on the market since the end of 2007 has set up a termination rate that is considerably higher than that of Siminn and Vodafone. Nova has to date not been designated as having significant market power and has thus not been subject to the imposition of pricing obligations. Nova has not seen itself forced to reduce its termination rate with the exception of a 4% reduction on 1 June 2008 (from ISK 12.5 to ISK 12.0. The Nova minute rate, taking interconnection charges into consideration, is about 64% higher than that of Siminn and Vodafone.

122. There is little experience of the strength of IMC and of the potential buying power of the company's counterparties on the termination market. One should however consider it likely that countervailing buyer power would not have a significant influence on IMC pricing now that it has increased its participation in the domestic market. Experience has shown that new companies entering the mobile phone market do not seem to be under pressure to lower their termination rates, unless the PTA intervenes, see the previous discussion on Vodafone and Nova.

123. The bargaining power of customers at the retail level is limited particularly with respect to the CPP principle. As has been stated it seems that customer price awareness at retail level is rather low, which limits their reactions to price increases. One could draw the conclusion that many small customers have less bargaining power than a few large customers. The PTA however believes that the opportunities of large customers are limited and insufficient to influence termination pricing.

³⁷ Deviation band included for reasons of confidentiality.

124. The PTA considers that there seems to be insufficient customer bargaining power at the wholesale level or retail level to conclude that Siminn, Vodafone, Nova and IMC do not have a dominant market position in the markets for call termination on their own mobile phone networks. As substitutability does not exist, neither in wholesale nor retail markets, then this limits the possibility of customer bargaining power on the relevant markets. There seems to be a general unwillingness among mobile phone companies to reduce termination rates without the intervention of the PTA.

4.5 Price development

125. Price development over a given period of time indicates the level of competition between companies. If prices are steady over the given period of time one can conclude that there is not much competition and that the parties on the market are satisfied with what they have. Regular and parallel changes in price indicate price fixing on the market while fluctuating and irregular changes in price are indicators of hard competition. On the relevant markets for call termination in individual networks the prices and price development for call termination give a good picture of the competitive position of the mobile phone companies that are operating.

126. When competition on the mobile phone market commenced in 1998 Tal³⁸ and Siminn had the same termination rate where the average of day and night rates was then ISK 12.43 per minute. In 2000, both companies reduced their termination rates and the average was then ISK 11.25. There was another reduction in January 2001 when the average became ISK 11. Íslandssími entered the market in 2001 and then had the same termination rate as the other companies. Around the turn of the year 2001/2002 Íslandssími and Tal raised their prices. The average Vodafone rate per minute was from that time ISK 12.1 and the connection charge was ISL 0.99 against Siminn's ISK 0.68. Siminn reduced its price a little at the beginning of 2002 and its average price was then ISK 10.5. There were no further price reductions from these companies before the PTA made a decision on lowering prices.

127. With the PTA decision dated 23 April 2003, Siminn was required to reduce its rates for call termination for day and night. With the PTA decision subsequent to analysis of Market 16 that was published 20 June 2006 Siminn and Vodafone were required to reduce their minute rate to ISK 7.49 and their connection charge to ISK 0, with the reduction being implemented in four phases over two years, which was completed on 1 June 2008.

128. Nova entered the market at the end of 2007 with a termination rate of ISK 12.50 per minute and a connection charge of 0.60 per call. Siminn complained about this pricing and demanded that the PTA decide a lower price. After Siminn's complaint had been taken up by the PTA, Nova reduced its price to ISK 12.00 per minute from and including 1 June 2008, but its connection charge remained unchanged. The PTA decided, by its decision no. 22/2008 from 14. August 2008, not to demand a further reduction by Nova for the time being as the pricing was to be examined in more detail in connection with the planned market analysis.³⁹

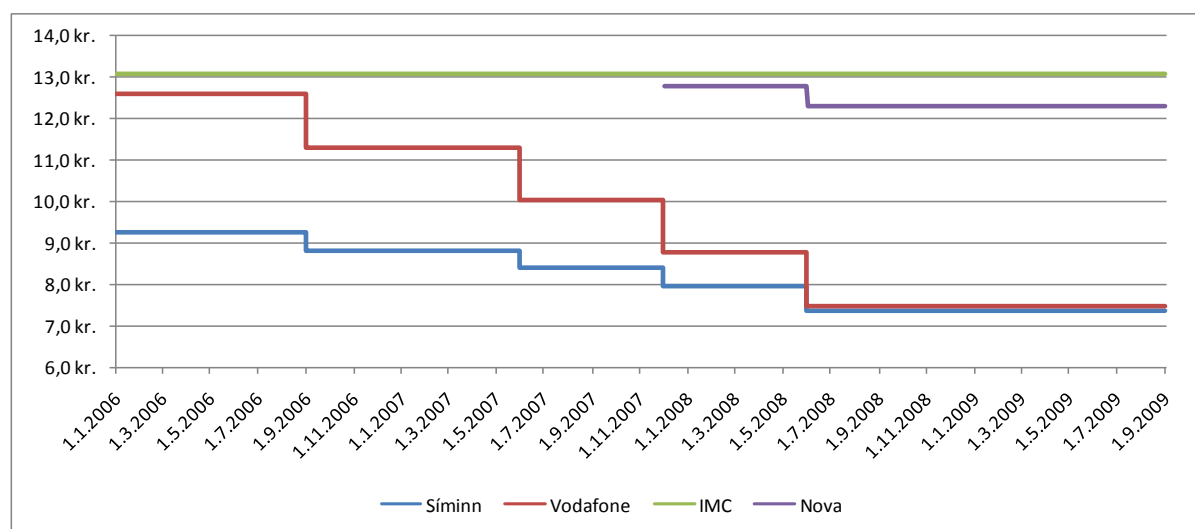
³⁸ i.e. Tal hf. That later merged with Íslandssími hf. and is today Og fjarskipti ehf. Vodafone

³⁹ The following is stated among other things in the above-specified decision: *“The institution’s conclusion will on the other hand be solely based on the views pursuant to Article 24 of the Electronic Communications Act, i.e. on whether the Nova tariff will be considered to imply limitation on hindrance in making an interconnection agreement in the understanding that it would be considered unfair to Siminn, that could then possibly refuse interconnection. This means that it is not possible to prescribe obligations on Nova in this decision on the basis of Article 24 of the Electronic Communications Act, i.e. on monitoring of the company’s tariff,... Such*

The matter in question was first and foremost an interconnection dispute but the PTA could not impose tariff obligations on e.g. Nova in such a matter. Such will only be done subsequent to a market analysis. This matter was closed in 2008 and the market analysis under discussion here was commenced in December of that year. No changes have been made to Nova's termination rate after that.

129. IMC Ísland ehf. termination prices were for a long time such that the day rate was ISK 13.5 per minute and the night rate ISK 12 per minute and the connection rate ISK 0.70 per call. These prices remained unchanged from the outset until the company made a roaming agreement with Siminn in November 2009. According to the IMC interconnection price list in May 2010 the company's termination price is ISK 12 for parties other than Siminn. The termination price to Siminn is ISK 7.49 for calls originating in Siminn's fixed line network and/or NMT network. On the other hand calls from Siminn's mobile phone network that terminate in the IMC system are priced as though they were on-net calls in Siminn's mobile phone network, i.e. the origination and termination of the call are priced at ISK 6.53 in the above-specified roaming agreement between the companies. There has not been much discussion about the prices in force at IMC as there has been very little traffic terminating in the IMC network. This will now be remedied as IMC/Alterna launched a major marketing campaign on the Icelandic mobile phone market in April 2010. The PTA considers that if it came to negotiations, then IMC could maintain higher prices than its counterparties, as new companies entering the market in Iceland have without exception maintained high termination prices until the PTA has intervened. This seems now confirmed, at least the termination charges to others than Siminn.

Figure 4.1 Development of termination rates of mobile phone companies 2006 - 2009⁴⁰



Source: PTA

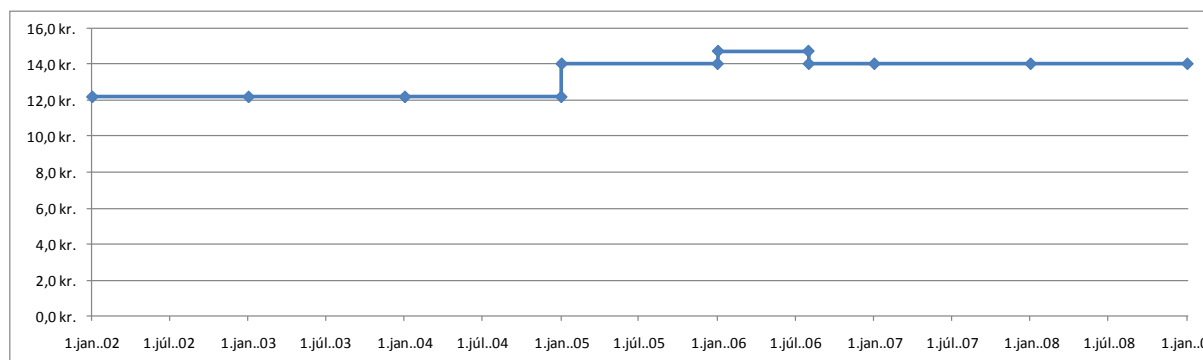
130. The termination rate in Siminn's NMT network has increased slightly from 2000 until price increases were banned by the decision of the PTA from 20 July 2006. At the beginning of 2006 the rates were ISK 0.47 connection charge, ISK 12.86 day rate and ISK 11.39 night rate. In November 2000 a change was made where the connection charge increased to ISK 0.68, the day rate was reduced to ISK 12.5 per minute and the night rate to ISK 11.25 per minute. In 2005 the minute rates increased to ISK 14.4 day rate and ISK 13 night rate. On 1

obligations may only be imposed on a company on the basis of a market analysis in accordance with the rules that apply to it."

⁴⁰ Given minute rate and connection charge for a 2 minute call where applicable.

January 2006 Siminn increased its night rate to ISK 14.40 that was reduced again to ISK 13 when the decision on Market 16 came into force in July 2006 as increases were banned from the end of 2005.

Figure 4.2 Termination rates for calls in Siminn's NMT mobile phone network⁴¹



Source: PTA

131. As stated above the cost of termination of a telephone call between mobile phone networks in this country is borne by the caller, an arrangement that also applies commonly abroad. In the USA and in some other countries this arrangement is different such that mobile phone network operators charge their own subscribers for call termination in other networks (Receiving-Party-Pay or RPP). Studies have shown that termination rates are higher where the arrangement is CPP (Calling-Party-Pay) as compared to RPP⁴². It is thought that higher termination rates with CPP can be attributed to a lack of competitive incentive in mobile phone network operators and lower price awareness among users about the cost of call termination in other mobile phone networks. Some economists maintain that high termination rates are used to subsidise equipment for operators' own users and the cost of gaining customers and that they are not in accordance with the costs in most countries.

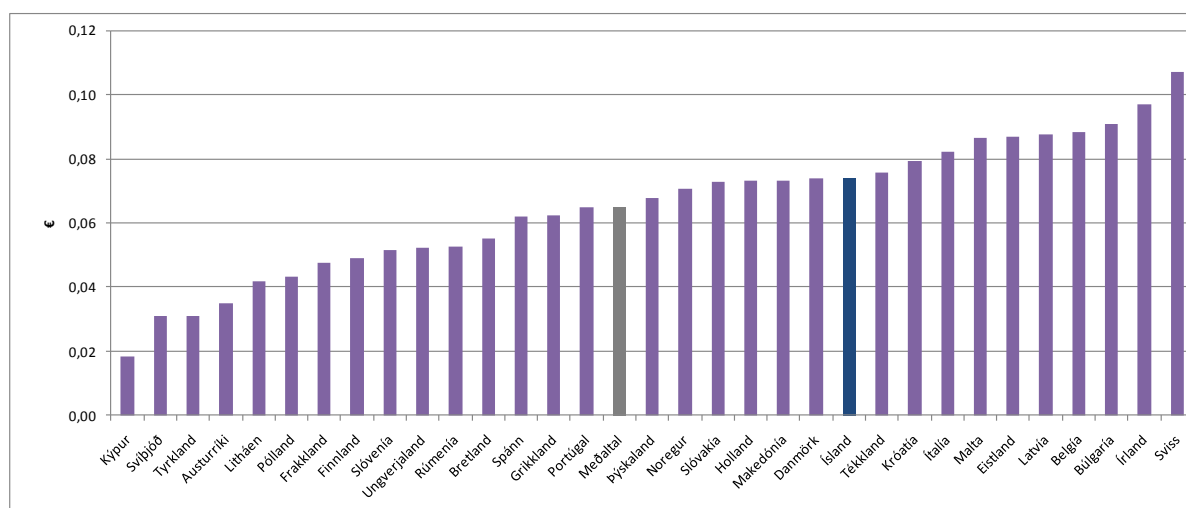
132. Figure 4.3 shows a comparison between termination rates by country. These are average prices for termination in mobile phone networks in Europe. The price includes connection charge and is for an average call of 3 minutes. This a weighted average of prices of mobile phone companies in each country, using market share against number of customers with subscriptions and prepaid cards. Iceland is in 22nd position of 32 European countries in this comparison, and was in 15th position of 30 in an analogous comparison in 2006 when the last market analysis was made. The comparison also shows that termination rates are above the average in Iceland⁴³.

⁴¹ Given a minute rate 50% day rate/ 50% night rate and connection charge for a 2 minute call.

⁴² See Crandall and Sidak; Josha Gans, Sephan King, and Julian Wright, *Wireless Communications, Handbook of Telecommunications Economics* (Martin Cave et. Al eds., North-Holland Volume 2) (2004); Chris Doyle and Jennifer C. Smith, Regulation Initiative Working Paper No. 21: *Market structure in Mobile Telecoms: Qualified Indirect Access and the Receiver Pays Principle* (May 1999), available at <http://ssrn.com/abstract=321420>.

⁴³ The price in ISK is converted to EUR using a 5 year average exchange rate from the Iceland Central Bank. 1 EUR = ISK110.71. The PTA comparison with other countries is solely for information purposes and is not the basis for the decision on termination charges. In Chapter 4.5 on price development the PTA is making a comparison on the development of termination charges between the years 2006 and 2009. Iceland's position is compared with that of other European countries from the first market analysis of the market for termination which was published in 2006 and where the same criteria were used in calculating prices and average exchange rate for the years in question, i.e. five year average exchange rate. The Appellate Committee for Electronic Communications and Postal Affairs did not comment on this PTA approach in its decision on the market in question. The imbalance that has characterised the exchange rate of the ISK in the past years means that

Figure 4.3 Average termination rates in Europe 1. January 2010



Source: National Regulatory Authorities/IRG

133. The PTA considers that there are many indications that call termination rates of telephone calls in mobile phone networks charged by Icelandic companies are higher than costs justify. This is first and foremost confirmed by Siminn's recent cost analysis.⁴⁴ In addition one has to assume that the 100% higher retail price for calling a mobile phone number in other networks is mostly determined by higher termination rates compared to those that apply of the call originates and terminates in the same network. This is rather based on the manner of collection of payments for such call (CPP principle) than on real costs as stated above. Calls that originate and terminate in the same mobile phone network seem not to be subsidised while price discrimination is applied to external traffic by pricing termination from other networks much higher than that originating internally. As stated above the PTA has a cost analysis from Siminn that indicates that the cost of termination is in reality much lower than current termination rates suggest, but this issue will be treated in more detail later in this document in the chapter on obligations.

134. The PTA concludes that in the light of experience from past decades that mobile phone companies have very little if any incentive to reduce termination rates without the intervention of regulatory authorities and there is every indication that they endeavour to price much in excess of costs. This is a clear indication that companies can behave without consideration for customers and competitors and thus enjoy significant market power each in its own network.

4.6 Assessment of significant market power on the relevant markets and designation of companies with significant market power

135. Assessment of Significant Market Power (SMP) is based on ESA Guidelines and on

comparison with foreign prices is very difficult. In addition one needs to examine in each instance the nature of the comparison and its context. Price comparison was used to decide termination charges in the previous market analysis on the market in question, but this is not the case here as the basis is the Siminn cost analysis. By using the five year average exchange rate the PTA considers that a truer picture is obtained of comparison between production costs as the initial investment required to provide the service in question has normally been built up over a long period of time, and in addition a large part of operational cost is domestic cost.

⁴⁴ The PTA endorsed the Siminn cost analysis with regards to termination of calls in the company's mobile phone network with Decision no. 9/2010 from April last year.

various other criteria. The PTA takes current market circumstances into account in its assessment. The developments of past years are also kept in mind and projections for the coming months.

136. In Paragraph 1 Article 18 of the Electronic Communications Act, no. 81/2003 states the following: *An undertaking shall be deemed to have significant market power if it, either individually or jointly with others, holds a position of economic strength on a certain market which enables it to prevent effective competition and to operate to a substantial extent without concern for competitors, customers and consumers.*

137. This is an important point of departure in the market analysis and the PTA wishes to emphasise that the proper criteria is significant market power and not abuse of a dominant market position. Thus the consideration of whether a dominant position has been abused or not is not the fundamental point of the market analysis. This does not mean, however, that an undertaking's behaviour in the market does not make any difference in the assessment of SMP. Even though the formal aspects of the market are most meaningful, behaviour that promotes a dominant position or maintains a dominant undertaking's competitive advantage can further strengthen the position of the company in question.

138. A company can have significant market power on its own (single dominance) or along with one or more other companies (collective or joint dominance). If the conclusion is that one company has significant market power it is usually unnecessary to consider whether joint dominance is the case. Should the conclusion be on the other hand that no company has sufficient market power on its own then the likelihood of joint dominance has to be assessed. Should a company have a dominant position in a specific market one may also assume that it will have a dominant position in related markets if the connection between the markets is such that the company can use its power on one market to strengthen its position in another market, see Paragraph 2 Article 18 of the Electronic Communications Act.

139. As has been previously stated there are four companies that offer call termination in their mobile phone networks that fall within the scope of the description of the relevant market. Siminn and Vodafone are the largest companies, but Nova is a new entrant in the market and considerably smaller, but has nevertheless gained a significant number of users in a short time. The operations of the fourth, IMC Ísland, was for a long time limited but the company operates in this country and has done for many years so it is a part of the relevant market in the opinion of the PTA. There the most important factor is that the company made a roaming agreement with Siminn on 26 November 2009 and plans major development and investment in its mobile phone network in this country. According to the above roaming agreement IMC is authorised to transfer rights and obligations according to the agreement in question to its sister company, Alterna. In April 2010 Alterna launched a major marketing effort on the Icelandic mobile phone market with opening of a retail outlet and with an advertising campaign. The PTA considers that IMC and Alterna form one economic whole in the understanding of competition law. Should IMC transfer its rights and/or obligations according to the roaming agreement with Siminn then the obligations imposed on IMC by this decision are transferred to Alterna.

140. All companies have 100% market share in call termination in their own mobile phone networks, Siminn in its GSM/UMTS and NMT mobile phone networks, Vodafone in its GSM mobile phone network and UMTS service that is provided through Nova transmitters, Nova in its UMTS network and IMC Ísland in its GSM network. In the opinion of PTA, the relevant markets are characterised by absolute entry barriers, and potential competition is not

foreseeable within the next two to three years. In view of the foregoing assessment, most factors indicate that all the companies have SMP. In order to come to a different conclusion, factors must exist that have a significant effect on these companies' market power. Such factors are found primarily in countervailing buying power, which does not seem to exist.

141. Based on the market analysis, there are indications that the competitive conditions in the market do not generate pressure on the price for call termination in mobile networks. At present, technology does not offer the possibility of supply-side substitutability. There is no countervailing buying power neither at the wholesale nor the retail levels, and nothing indicates that competitors, customers, or consumers could make an impact on rates for call termination in the company's mobile networks.

4.6.1 Siminn

142. Siminn is the largest electronic communications undertaking in Iceland and operates in most defined electronic communications markets. Siminn was the first operator to offer mobile services throughout the country. Siminn is also the largest purchaser of call termination in the wholesale market. In the opinion of PTA, it cannot be seen that there are demand-side conditions that could reduce Siminn's market power in call termination on its own mobile networks. Siminn's position, both in the relevant market and in the mobile market in general, indicates that it could, to a significant extent, operate without concern for competitors, customers, and consumers. Considering these factors, it is PTA's assessment that Siminn possesses significant market power in the wholesale market for call termination on its own networks, both in GSM/UMTS and NMT networks.

4.6.2 Vodafone

143. Vodafone is the second-largest electronic communications undertaking in Iceland and also operates in all defined electronic communications markets. Vodafone also offers mobile services throughout the country. Vodafone's position, both in the relevant market and in the mobile market in general, indicates that it could, to a significant extent, operate without concern for competitors, customers, and consumers. Considering these factors, it is PTA's assessment that Vodafone possesses significant market power in the wholesale market for call termination on its own networks, both in GSM/UMTS and NMT networks.

4.6.3 Nova

144. Nova is the newest entrant in the domestic mobile phone market and operates solely a UMTS mobile phone network, but has made a cooperation agreement with Vodafone which among other things assures the company access to roaming in the Vodafone GSM system. The company has had free rein in deciding call termination rates and has offered a much higher price than the prices Siminn and Vodafone were obliged to offer following the first round of market analysis in the relevant market. The buying power of Siminn and Vodafone is not sufficient to press down Nova prices which indicate that the company can operate without considering competitors, customers in the call termination market and consumers. Considering these factors, it is PTA's assessment that Nova possesses significant market power for call termination on its own UMTS network.

4.6.4 IMC Ísland

145. IMC Ísland is the smallest operator in the relevant market to date. The company has to date had very few domestic users and the scope of its activities in this country has been in all respects very limited up to 2009, as there have been no major obligations for development

imposed on the company according to its existing frequency licence. The company made a roaming agreement with Siminn on 26 November 2009 and plans major development and investment in its mobile phone network in this country. According to the above roaming agreement IMC is authorised to transfer rights and obligations according to the agreement in question to its sister company, Alterna. In April 2010 Alterna launched a major marketing effort on the Icelandic mobile phone market with opening of a retail outlet and with an advertising campaign. The PTA considers that IMC and Alterna form one economic whole in the understanding of competition law. Should IMC transfer its rights and/or obligations according to the roaming agreement with Siminn then the obligations imposed on IMC by this decision are transferred to Alterna. Though IMC operations on the Icelandic mobile phone market have long been very small, the same significant access barriers exist as with other network operators. The company thus has 100% market share in its own network and will have that in the near future. The company's termination charges have been among the highest and have not changed significantly from the outset, except current prices to Siminn. The company's termination price is ISK 12 to other parties than Siminn but is ISK 7.49 to Siminn for calls originating in Siminn's fixed line network and/or NMT network. On the other hand calls from Siminn's mobile phone network that terminate in the IMC system are priced as though they were on-net calls in Siminn's mobile phone network, i.e. the origination and termination of the call are priced at ISK 6.53 in the above-specified roaming agreement between the companies. The PTA considers that such discrimination is not in compliance with the non-discrimination obligation when a final decision has been made where the discrimination is not based on objective criteria. Experience shows that that new entrants to the market do not have to bow to countervailing buying power and that they can maintain higher prices than their counterparties despite their size. IMC has had mobile phone operations in Iceland for just under 10 years and though operations have been limited to date it must be included as one of companies operating on the call termination market, as there is nothing to suggest that they do not intend to continue operations in this country for the foreseeable future, see e.g. the new application for extension of frequency licence and the above-mentioned marketing campaign. Taking all this into account the PTA therefore concludes that IMC could to a significant extent operate on the relevant market without considering competitors, customers in the call termination market and consumers. Considering these factors, it is PTA's assessment that IMC possesses significant market power for call termination on its own GSM network.

4.7 Conclusion

146. In light of the above market analysis, PTA intends to designate Siminn, Vodafone, Nova and IMC Ísland with significant market power in the relevant wholesale markets for call termination in their own mobile networks.

5.0 Imposition of obligations

5.1 Obligations - general

147. According to Paragraph 2 Article 17 of the Electronic Communications Act, market analysis shall be the basis for decisions on whether the PTA shall impose, maintain, change or lift obligations on companies with significant market power. If market analysis reveals that there is not effective competition in the relevant market and that one or more electronic communications undertakings in that market possess significant market power, PTA is authorised to impose one or more obligations on the company designated with SMP in accordance with Article 18 of the Electronic Communications Act. Should the PTA have previously imposed obligations on the company in accordance with communications legislation, then those obligations will be reviewed, maintained, changed or rescinded in accordance with the conclusions of the market analysis.

148. Article 27 of the Electronic Communications Act states that when an electronic communications undertaking is designated with significant market power, PTA may impose on it obligations concerning transparency, non-discrimination, accounting separation, open access to specific network facilities, price controls and cost accounting, as necessary for the purpose of promoting effective competition.⁴⁵ These obligations are described in more detail in Articles 28 – 32 of the Act.

149. In choosing obligations to impose in order to resolve defined competition problems, several base principles need to be kept in mind.⁴⁶ All imposed obligations shall be based on the nature of the defined problem and shall be designed to solve that problem. They shall be transparent, justifiable, reasoned, and in line with the objectives they are designed to achieve; that is, to promote competition, contribute to the development of the internal market, and safeguard users' interests. Obligations must be proportionate and may not impose heavier burdens on operators than is considered necessary.

150. In the ERG report on remedies, emphasis is placed on infrastructure-based competition through the restructuring of electronic communications facilities or networks where this is considered desirable. In such cases, imposed obligations should promote such build-up. When infrastructure-based competition is not considered desirable due to significant and constant economies of scale and scope or other barriers to entry, it is necessary to guarantee sufficient access to electronic communications networks and equipment at the wholesale level. In this context, it is necessary to ensure two things: first, to encourage service-based competition and second, to guarantee a sufficient fee for access to existing electronic communications networks, thus providing an incentive for further investment in such networks, as well as renovation and maintenance of these networks.

151. For the long term, service-based competition that has its foundation in steered access to a cost-oriented price can be a tool for generating competition through the restructuring of electronic communications networks. This refers to that which is called "the investment ladder," and its objective is to create conditions that make it possible for new operators to build up their electronic communications networks step by step.

⁴⁵ See also Articles 9 – 14 of the directive on access.

⁴⁶ See Article 8 of the framework directive.

152. In selecting the obligations that are to promote competition in the relevant market, it is also possible to consider the position that would exist if obligations were not imposed on the relevant market and whether it would be sufficient to use competition legislation alone to guarantee competition.

5.2 Competition problems

5.2.1 General – about competition problems

153. Obligations are imposed on companies with significant market power with the aim of combating real and/or potential competition problems in the relevant markets. The term competition problems refers to whatever behaviour of a company with significant market power that is adopted in order to force its competitors out of the market, hinder potential competition from entering the market and/or harms consumers' interests. When obligations are imposed in accordance with the Act on Electronic Communications the criteria is not that a case of abuse of dominant market position exists. It suffices that a competition problem could potentially arise given the prevailing circumstances.

5.2.2 Competition problems in markets for call termination in individual mobile phone networks

154. Competition problems in the relevant markets can be traced primarily to situations where a mobile phone company that controls the network in which calls are terminated has a monopoly in the relevant market. Moreover, because of technological hindrances, calls can only be terminated in the network used by the called party. Thus it cannot be seen that there is the potential for competitive pressure in the relevant market, and this situation is not expected to change in the foreseeable future. The CPP principle also reduces the possibility that users will make an indirect impact on the pricing of call termination, as they must be considered insensitive to increases in price for the termination of calls to their own mobile phones.

155. Mobile operators have a monopoly on call termination in their own networks and can therefore operate to a substantial degree without concern for customers or competitors. This monopoly position held by mobile operators enables them to demand higher termination rates than they could if there were competitive pressure in the market. PTA believes there are a few points that indicate specifically that all four mobile phone companies are charging excessively high termination rates. In the first case the recent Siminn cost analysis, endorsed by the PTA Decision no. 9/2010 from April 2010, indicates that costs incurred for termination, by efficiently operated companies in Iceland, are much lower than current termination charges would indicate. In the second case, the companies' termination prices are high in comparison with prices for on-net calls. It should also be noted that Iceland does not belong to the group of European countries with the lowest average termination prices, see figure 4.3 and Paragraph 132.

156. Most competition problems in the relevant markets are related to call termination rates in the companies' mobile networks. Other problems can be related to rejection of interconnection, delayed interconnection, and discrimination. PTA is of the opinion that there is excessive pricing of voice calls originating in networks other than those in which termination takes place. It is PTA's opinion that the expense of off-net calls does not justify the approximate doubling of prices over and above the price of on-net calls. In PTA's opinion, this is, among other things, a consequence of the arrangement used for payment for call

termination — that is, the CPP principle — wherein someone other than the company's own customers bears the expense, and is a result of limited price awareness among consumers. The cost is transferred to those users who are connected to other mobile or fixed-line networks.

157. The large difference between the companies' call termination rates is also a problem and has a detrimental effect on consumers. Consumers have difficulty realising what a call costs, as retail prices reflect the companies' call termination rates for traffic from other networks, and the difference in price for on-net and off-net calls creates non-transparency because it is not certain that the caller knows what network he is calling in any given instance. This reduces transparency and customer mobility and works against users' interests.

158. The PTA considers that calls that originate and terminate in the same mobile phone network are subsidised while price discrimination is applied to external traffic by pricing termination from other networks much higher than that originating internally. Excessively high termination rates can also affect the entry of new service providers into the mobile market; it can either deter them from entering the market or limit their ability to operate there in competition with other companies and gain market share. In the opinion of PTA, this indicates that the price for call termination in mobile networks is higher than is warranted by expenses.

159. In fact, no changes have taken place in the structure of the market since the last market analysis was made. Despite the fact that there are now more companies offering mobile phone call termination, there is only one company on each market. No technological developments have emerged that enable competition on the call termination in individual networks. The problem concerning pricing is still there and prices have only been significantly reduced in those instances where the PTA has intervened. The PTA considers that all the problems identified on the market in 2006 still persist and that it is obliged to take measures and impose appropriate obligations according to the provisions of the Electronic communications Act.

5.3 Obligations in force

5.3.1 Obligations imposed on 20 July 2006

160. With a decision dated 20 July 2006 on imposition of obligations following market analysis of Market 16 for call termination in individual networks the PTA imposed the following obligations.

5.3.1.1 Obligations on Siminn and Vodafone GSM networks

Obligation to grant access to GSM mobile phone network for call termination

161. The obligations were imposed on Siminn and Vodafone to come to agreement with electronic communications companies that offer general electronic communications services or electronic communications network and to offer call termination in their GSM mobile phone networks. The interconnection agreements shall be completed without delay and no later than within one month from the time they are requested. Both companies shall offer the option of connecting directly to their mobile phone networks and the condition shall not be made that mobile phone traffic is routed first through the companies' fixed line phone networks.

Obligation for transparency

162. The obligations were imposed on Siminn and Vodafone on transparency and that they publish reference offers. The companies shall publish a price for call termination in mobile phone calls their networks along with information on the technical requirements made for connection. The companies shall also publish accounting information on financial results in GSM network operation in cooperation with the PTA. The companies shall publish reference offers for interconnection. Interconnection agreements for all mobile phone networks must be sent to the PTA no later than one week after they have been signed.

Obligation for non-discrimination

163. The obligation was imposed on Siminn and Vodafone to practice non-discrimination in making agreements for call termination in their GSM mobile phone networks. The companies shall provide all wholesale buyers of call termination, including their own departments, service on comparable terms, price and quality. Access to the network shall be provided with similar notice. The companies shall operate in such a manner that the treatment of information that comes to light in making and implementing interconnection agreements is in accordance with Article 26 of the Electronic Communications Act. It is unauthorised to provide other parties with information about transactions with other companies about call termination, including other departments of the company, subsidiaries or collaborators.

Obligation for separation of accounting

164. The obligation was imposed on Siminn and Vodafone of accounting separation of their GSM mobile phone networks. Accounting separation shall be implemented for income, costs, assets and liabilities for mobile phone service at both wholesale level and retail level. Siminn shall also separate between operation of GSM and NMT mobile phone networks. Siminn and Vodafone are obliged to provide the PTA annually with an itemised profit and loss account and balance sheet for wholesale and retail mobile phone network services along with a statement of the division of indirect costs which cannot be seen by comparison of other cost items.

Obligation for monitoring of tariffs

165. The obligation was imposed on Siminn and Vodafone to reduce termination rate in their GSM mobile phone networks to ISK 7.49 by 1 June 2008 and the companies shall offer only one price for call termination regardless of whether the call is made during the day, at night or at the weekend. In addition the connections cost of the companies shall be reduced at regular intervals, in four steps, until it is discontinued by 1 June 2008. The price was calculated with a comparison with termination rates on comparable markets abroad where the average of the three lowest was taken.

5.3.1.2 Obligations on Siminn's NMT mobile phone network

Obligation to grant access to NMT mobile phone network for call termination

166. The obligations were imposed on Siminn to come to agreement with electronic communications companies that offer general electronic communications services or electronic communications network and to offer call termination in its NMT mobile phone network. Interconnection agreements shall be completed within one month from the time they are requested. Siminn shall offer the option of connecting directly to its own mobile phone network and the condition shall not be made that mobile phone traffic is routed first through the companies' fixed line phone networks.

Obligation for non-discrimination

167. The obligation was imposed on Siminn to practice non-discrimination in making agreements for call termination in its NMT mobile phone network. Siminn shall provide all wholesale buyers of call termination, including their own departments, service on comparable terms, price and quality. Access to the network shall be provided with similar notice. Siminn shall operate in such a manner that the treatment of information that comes to light in making and implementing interconnection agreements is in accordance with Article 26 of the Electronic Communications Act. It is unauthorised to provide other parties with information about transactions with other companies about call termination, including other departments of the company, subsidiaries or collaborators.

Obligation for monitoring of tariffs

168. The obligation was imposed on Siminn not to offer higher rates for call termination in its NMT mobile phone network than were in force according to the price list on 31 December 2005, i.e. ISK 14.4 day rate, ISK 13 night rate and ISK 0.68 connection charge.

5.3.2 The effect of obligations in force

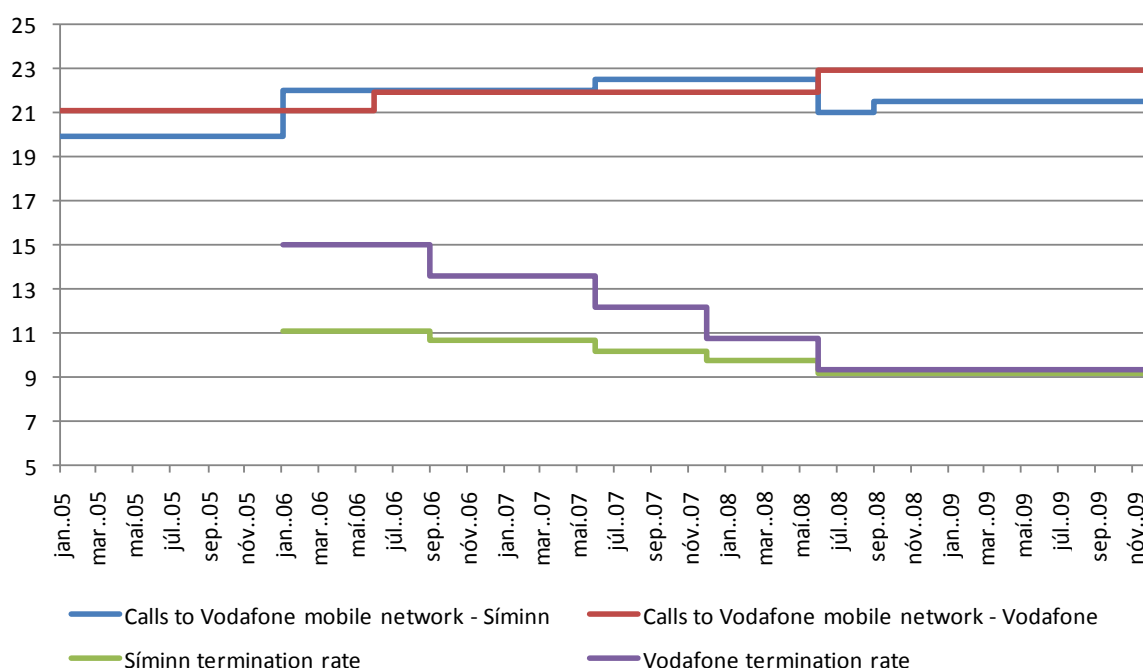
169. The obligations in force have by definition a direct impact on the termination rates of Siminn and Vodafone, as they prescribe a reduction of termination rates in GSM networks and a ban on price increases in the NMT network. The obligations have had no effect on termination rate except exactly that which was prescribed. Neither Siminn nor Vodafone have reduced their prices more than they were obliged to, despite the fact that cost analysis indicated that call termination costs were considerably lower than the prices on offer indicate.⁴⁷ The reduction of termination rates at Siminn and Vodafone has not been an incentive to other companies to reduce their termination rates.

170. The reduction and equalizing of the call termination rates by Siminn and Vodafone has to some extent caused a levelling of retail prices for calls within their mobile phone networks. Though there is still in some instances a difference in the price of calls from other networks into the networks in question. For example it is more expensive to call from Siminn's fixed line phone network into Vodafone's mobile phone network than into Siminn's mobile phone network. There is a corresponding difference when calling from Vodafone's fixed line network into Siminn's fixed line network. Some subscription packages offer one price for calls into all mobile phone networks except into Nova's network which has a much higher termination rate as has previously mentioned. Calls within the same mobile phone network are still in general much more inexpensive than calls between networks. There is no discernible reduction in retail prices with reduction of wholesale prices and in some cases they have risen, and this is a matter of concern for the PTA. Though one could doubtless maintain that they are lower in real terms if one takes into account inflation in the past years. If there will be no correlation between the development of wholesale and retail prices during the lifespan of the market analysis here under discussion, despite considerable reduction in termination rates, then the PTA considers it clear that it will have to impose retail obligations, see Paragraph 2 Article 27 of the Electronic Communications Act⁴⁸.

⁴⁷ The conclusion of the Siminn cost analysis, endorsed with specific changes by the PTA Decision no. 9/2010 from April 2010, is that termination price shall be ISK 4. This is considerably lower than the ISK 7.49 that Siminn and Vodafone charge today and much lower than the Nova and IMC termination charges..

⁴⁸ In Paragraph 2 Article 27 of the Electronic Communications Act it says: Should the PTA, subsequent to a market analysis according to Article 17 that wholesale obligations or measures regarding pre selection or carrier pre selection will not return the intended results of strengthening competition and protecting the interests of users of electronic communications services then the Administration is authorised to impose retail obligations on a

Figure 5.1 Development of retail prices and termination rates of Siminn and Vodafone



Source: PTA According to the companies' general price lists. All prices incl. VAT

171. Companies have not used the obligations imposed on Siminn and Vodafone to offer connections directly with mobile phone networks. All calls from other networks geographic first through the companies' fixed line networks which result in increased costs from transit.

172. The reductions in termination rates result in a certain loss of income for the mobile phone companies. It is however difficult to say how this affects their financial performance, as there are many other factors that play a part. If a reduction in termination rate is imposed on all parties in the market then that reduces the cost of buying call termination services and so it is not possible to maintain that reduction of termination rates is a burden on the whole. The reductions in termination rates bring more transparency to the generation of costs and income than before and there will be a better foundation created for price competition on the mobile phone market. Should lower termination rates lead to lower retail prices for mobile phone services then the use of such services may increase and thus the income of the mobile phone companies. The PTA considers that termination rates need to be reduced further and that all companies that have significant market power in their own networks need to be subject to price control in order to realize the full effects of these obligations. This could mean that some mobile phone companies will need to change their pricing policy when termination charges are reduced. .

5.4 Proposals for obligations

173. The PTA concludes on the basis of its market analysis that obligations should be imposed on Siminn, Vodafone, Nova and IMC on market for call termination in individual

company with significant market strength". Then it says in the provision that such obligations can among other things involve the setting of a ceiling on retail prices, banning discrimination of users and the bundling of different types of electronic communications services in an inclusive package, should that be to the detriment of competition.

networks. This chapter will define and present in more detail the content of the obligations that the PTA intends to impose.

5.4.1 Obligation to provide access

174. According to Paragraph 1 Article 28, of the Electronic Communications Act the PTA may instruct electronic communications undertakings with significant market power to meet normal and reasonable requests for open access to public electronic communications networks, network elements, and associated facilities under certain conditions prescribed by the Administration. Paragraph 2, Subparagraph (g) of the same Article states that it is permissible to require that electronic communications undertakings interconnect networks or network elements.

175. In imposing access obligations it is necessary to consider whether the access in question will be an incentive for investment in the network, promote innovation, efficiency and sustainable competition. In Paragraph 3 Article 28, of the Electronic Communications Act it says that the decision to impose obligations according to Paragraph 1 should take into account of whether it is:

- technically and financially realistic to use or install competing facilities in view of market developments and the nature and type of interconnection and access involved,
- feasible to provide the access proposed,
- justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment,
- to the advantage of competition in the longer term,
- inappropriate, in view of intellectual property rights,
- conducive to increasing the supply of services.

176. The PTA has assessed whether the obligation is technically and financially realistic to use or install competing facilities in view of market developments and the nature and type of interconnection and access involved. The PTA considers it feasible for all mobile phone companies to provide the access in question in the proposal, and that it is justifiable, in view of the original investment. The PTA considers that the obligations are to the advantage of competition in the longer term and conducive to increasing the supply of services.

177. According to Article 24 of the Electronic Communications Act all companies operating public electronic communications networks or public electronic communications services shall have the right to and be obligated to negotiate interconnection of networks and services. Call termination in mobile phone networks falls under this provision and it is thus a mandatory requirement that mobile phone companies offer other mobile phone companies call termination in their networks. The PTA should then not need to prescribe whether this access is provided with a special decision. On the other hand it could be necessary for the PTA to set specific conditions on the nature of the access.

178. The PTA considers that no significant problems have arisen with making interconnection agreements and there is no evidence of mobile phone companies being refused interconnection. There are however examples from the past where the making of interconnection agreements has taken too long a time and that negotiations have been problematic. The PTA considers it important that there should not be delays in making agreements for interconnection and that company's do not claim that there are technical barriers. The PTA will monitor whether agreements on interconnection with mobile phone

networks are made within a reasonable timeframe and whether reasonable requirements are made regarding technology. In order to prevent hindrance to the entry of new companies into the electronic communications market by the delaying of negotiations or limitation of information, the PTA plans to prescribe that interconnection agreements shall be concluded without delay and no later than within one month from the time they are requested. Should agreement not be reached then a party can request that the PTA decide whether an interconnection agreement should be made and on what terms.

179. The conclusion proposed by the PTA regarding access to call termination in mobile phone network is that Siminn should come to an agreement on interconnection with electronic communications companies that offer general electronic communications services or electronic communications network and offer call termination in their GSM/3G and NMT mobile phone networks in accordance with Article 24 of the Electronic Communications Act, see also item g. Paragraph 2 of Article 28 where Vodafone, Nova and IMC all bear the same obligation regarding their mobile phone networks.

180. The agreements shall be completed without delay and no later than within one month from the time they are requested. Siminn and Vodafone that both operate mobile phone networks and fixed line networks shall give their counterparties the option of connecting directly to the mobile phone networks and the condition shall not be made that mobile phone traffic is routed first through the companies' fixed line networks.

181. The PTA intends to withdraw the obligation on Siminn and Vodafone for transparency and publication of a reference offer as the PTA does not see this obligation as necessary in today's competition environment. It is in accordance with the principle of proportionality to not impose more obligations than necessary to resolve the competition problem in question. The PTA considers that Article 24 of the Electronic Communications Act and the access obligations described above suffice to assure the making of interconnection agreements on the relevant market without unnecessary delays. Though companies may not need to openly publish reference offers, they must inform electronic communications companies that request interconnection about everything necessary to ensure that making an interconnection agreement does not take longer than the time specified above. The fact that the interconnection has to date been routed through the fixed line networks of Siminn and Vodafone and that mobile phone networks have not be connected directly also reduces the need for transparency in the relevant market. The possibility however still exists for a mobile phone network operator to request direct interconnection with the mobile phone network of another mobile phone network operator's network. All the necessary information, which would otherwise appear in the reference offer, shall then be visible during negotiations between such parties. One could also point out that the maximum price will be fixed with price adaptation such that transparency in pricing will be assured.

182. By the same arguments as used here above, the obligation for transparency and publication of a reference offer will not be imposed on Nova and IMC.

5.4.2 Obligation for non-discrimination

183. According to Article 30 of the Electronic Communications Act, the PTA can impose obligations on an electronic communications company with significant market power that it be non-discriminatory when agreeing on interconnection or access. Such obligations should in particular ensure that an electronic communications company offer the same terms in analogous transactions and provide service and information on the same terms and quality as

it provides to its own service department, subsidiaries or collaborators.

184. Significant market power of a mobile phone company in call termination in its own network and the lack of possible substitution service can lead to the company discriminating parties that need the service, if the obligation of non-discrimination is not imposed. Such a company could e.g. have the incentive to sell unrelated parties call termination at a higher price than that which its own departments enjoy or to discriminate against unrelated parties. Such would have a detrimental effect on competition and would harm consumers who need to pay too high charges for calls between unrelated networks.

185. Even if companies have been guaranteed interconnection at a cost analysed price, the company with significant market power could try to discriminate in other ways, thus raising the costs of the competitor in order to remove him from the market. This could be done with poor supply of information, varying quality in services and unfair negotiation terms. Fair, proportionate and fair conditions for access, including price, are fundamental issues in the quest to strengthen competition. The PTA considers the obligation for non-discrimination well suited to tackle the problems that arise in connection with discrimination, both concerning price and other issues. The PTA considers the obligation for non-discrimination to be both fair and normal. It cannot be seen that it involves much cost or disadvantage for the companies in question except possibly IMC which already discriminates against parties with regards to termination charges.⁴⁹ The obligation for non-discrimination does not mean that all companies enjoy exactly the same terms but rather that all the variance in terms is based on objective criteria.

186. The PTA criticises the fact that the retail price for traffic in a mobile phone network from other mobile phone networks is generally much higher than for in-net calls. Low on-net prices and high prices for off-net traffic can give a mobile phone company with a large number of customers, competitive dominance over smaller networks when gaining new customers or when retaining customers, as most will choose to be in the most populated network to avoid expensive off-net calls. Such measures can be the equivalent of barriers for new electronic communications company as they must compete with lower in-net charges. This means that new companies need to have considerably higher termination charges than the larger companies and to offer cheaper or even free on-net calls. It is thus important that dominant companies on the retail market do not misuse their dominance on the retail market with abnormal pricing. With such behaviour the dominant company can force the new companies into unprofitable and unsustainable operations. It is thus important that the Competition Authority does not allow this to happen. If the wholesale price for call termination is higher for external traffic than for in-net then this can lead to price/margin squeeze.

187. The non-discrimination obligation was imposed on Siminn and Vodafone in the previous market analysis for termination in own mobile phone network for calls from the same mobile phone network, from other mobile phone networks or fixed line networks. the PTA plans to lift the non-discrimination obligation for on-net calls as it is considered more appropriate that the Competition Authority monitor such a problem on the retail market that concerns first and foremost the behaviour of a dominant company in pricing retail products. Equally it is not appropriate that such a non-discrimination obligation at wholesale level should limit the freedom of companies that are not dominant at the retail level to price their

⁴⁹ The IMC termination charge is ISK 12 to parties other than Siminn According to the roaming agreement between IMC and Símans from 26 November 2009 the IMC termination charge is ISK 7.49 to Siminn.

retail products as they please at any given time. It is also the view of the PTA that the problem in question will diminish in step with reductions in termination charges which is aim of the PTA in this market analysis. Then the PTA considers that the results of a new Siminn cost analysis show that pricing for origin and termination of on-net calls and for origin and termination of calls between mobile phone networks is similar. For this reason the non-discrimination obligation is now less important than it was in the previous market analysis when pricing of termination between mobile phone networks in wholesale was higher than retail price for on-net calls at Siminn and Vodafone. As was stated in Paragraph 181 in the previous analysis it was the opinion of the PTA that calls originating and terminating in the same mobile phone network were subsidised while price separation was practised against external traffic by pricing termination of calls from other networks higher than on-net calls. The available Siminn cost analysis indicates that there is no subsidising of on-net calls. It is however still the opinion of the PTA that price differentiation is still practised against off-net calls.

188. Equally the PTA considers that separation in termination rates, made under the cover of lack of transparency, and low customer countervailing power as a result of the CPP principle, not to be characteristics of a market with active competition. The PTA considers that the above price separation results from the fact that mobile phone companies have a monopoly of call termination in their own networks and can operate without concern for competitors, customers, and consumers. In the light of this and until it is shown to be otherwise, the PTA considers it appropriate to prescribe non-discrimination in pricing of call termination in own networks for off-net calls from mobile phone network and fixed line networks.

189. The obligation for non-discrimination already rests on Siminn and Vodafone from previous decisions on obligations in the relevant market. In the light of this, and as the obligation for non-discrimination will not apply to on-net calls, one can consider that it is not a great burden for those companies to continue to bear this obligation. The PTA considers it necessary to maintain the non-discrimination obligation in other respects to ensure that the companies do not discriminate against those parties to whom they sell call termination. Particular attention is paid to ensuring that the companies do not discriminate in pricing of termination that is prescribed in the obligation on monitoring of tariffs. the PTA considers further that it is necessary that the other companies on the market i.e. Nova and IMC bear an analogous obligation in order to create balance in the market and to ensure that the levelling of termination prices, see Chapter 5.4.4, has the desired effect.

190. Having regard to Article 30 of the Electronic communications Act, the PTA intends to maintain the non-discrimination obligation on Siminn, for its GSM and NMT mobile phone networks and for UMTS in addition, and on Vodafone for its GSM network and UMTS in addition for termination of calls in the mobile phone network in question from other mobile phone networks and from fixed networks and equally the PTA intends to impose the same obligation on Nova and IMC that they practice non-discrimination when making agreements in termination of calls in their relevant networks. Should discrimination exist when this decision is made, that is not based on objective criteria, then the company in question shall without delay adjust its agreements such that there is no discrimination. Should this not be done then the company in question may not collect higher termination charges than those of the company that collects the lowest termination charges. The companies shall provide all wholesale buyers of call termination service on comparable terms, price and quality. Access to the network shall be provided with similar notice. The companies shall operate in such a manner that the treatment of information that comes to light in making and implementing

interconnection agreements is in accordance with Article 26 of the Electronic Communications Act. It is unauthorised to provide other parties with information about transactions with other companies about call termination, including other departments of the company, subsidiaries or collaborators.

5.4.3 Obligation for accounting separation

191. The obligation for accounting separation may be imposed in accordance with Article 31 of the Electronic Communications Act. Accounting separation supports the discovery of possible failures in the market and sheds light on whether non-discrimination is practised. This obligation supports increased transparency because it sheds light both on wholesale prices and on the company's own internal pricing. The PTA considers it necessary to impose obligations on accounting separation in order to facilitate the Administration's monitoring of adherence to the rules and considers such obligations to be a prerequisite for effective obligations on transparency and non-discrimination.

192. According to the above provisions the PTA can impose obligations on electronic communications companies with significant market power regarding accounting separation between operations related to interconnection or access to other activities such that it will be possible to divide all income and costs between operational units that can be linked to varying services. In addition the PTA can demand of a company that operates both an electronic communications network and electronic communications services that its wholesale prices and internal pricing are transparent, among other things to prevent unfair subsidies. The PTA can decide what bookkeeping methods shall be applied. In order to ensure transparency and non-discrimination, the PTA can demand to be provided with bookkeeping documents, including information about income from third parties.

193. The purpose of accounting separation is among other things to be able to identify information in bookkeeping in order to demonstrate as accurately as possible the performance of specific activities in the operations, as though they were separate companies. Accounting separation of costs also reduces a company's possibilities of collecting payments for costs that are not related to the service in question.

194. If wholesale is separated from retail it is possible to assess performance with regards to whether the pricing of wholesale service is correct, whether there are examples of cross subsidy and whether all parties enjoy non-discrimination in prices and terms. The obligation for accounting separation makes it possible to identify the real cost of call termination. Accounting separation is also important for strengthening the belief that wholesale prices are based on cost.

195. Accounting separation supports the obligation for non-discrimination and in some instances is necessary for monitoring price lists, e.g. to determine whether there is a normal difference between wholesale and retail prices. If one is to use cost figures from companies when calculating costs the PTA considers it necessary that they use accounting separation. The PTA considers that otherwise it is not possible to determine a realistic termination rate.

196. Siminn and Vodafone bear the obligation of accounting separation in the relevant markets since the last market analysis from 2006. In the light of this it must be concluded that it will not involve much cost or disadvantage for them to maintain this accounting separation.

197. With the authority granted by Article 31 of the Electronic Communications Act, the

PTA intends to maintain the obligation of accounting separation on Siminn and Vodafone for their GSM networks. The accounting separation shall be implemented in the manner prescribed below.

198. In implementing accounting separation the operator shall record his bookkeeping such that it will be possible to divide all income and costs by operational units that can be linked to different services. Separated accounting is founded on the basic principle of cause and effect, i.e. that income and costs are broken down and attributed to the service or goods that generate the costs or income. The cost of operating networks and/or services shall be divided between operational units with a task-based cost analysis based on the methodology of identifying cost by tasks performed in the operational unit in question. This calls for appropriate and precise methods for dividing costs.

199. The cost component that cannot be divided on the basis of direct or indirect cost division, i.e. cost that cannot be attributed through comparison with other cost items shall be specially tagged in the bookkeeping of Siminn and Vodafone. In regulation no. 960/2001 on bookkeeping and accounting separation in the operations of electronic communications companies there are more detailed provisions on the implementation of accounting separation.

200. Accounting separation shall be implemented for income, costs, assets and liabilities for mobile phone service at both wholesale level and retail level. Siminn shall also separate between operation of GSM and NMT mobile phone networks. Siminn and Vodafone are obliged to provide the PTA annually with an itemised profit and loss account and balance sheet for wholesale and retail mobile phone network services along with a statement of the division of indirect costs which cannot be seen by comparison of other cost items. The above statements shall have been delivered to the PTA before 1 April each year for the preceding year.

201. In the case of Siminn's NMT network the PTA considers it not necessary to impose the obligation of accounting separation. As is discussed in Chapter 2.2 it is unclear whether Siminn's licence to operate an NMT system will be extended after the existing notice to close the system expires on 1 September 2010. Most indications suggest that the NMT service will be discontinued at that point in time and that it will be replaced by digital mobile phone service. The PTA therefore does not consider it necessary to prescribe accounting separation for the NMT network.

202. The PTA considers there to be no need for accounting separation at Nova or IMC. These companies do not have as varied operations as Siminn and Vodafone. There is thus not the same danger of discrimination in pricing when selling between departments within the same company. As is stated in Chapter 5.4.4 the PTA intends to have cost analysis at Siminn in mind when deciding termination rate for all companies in the market. It is thus not necessary to examine the accounts of Nova and IMC specially when deciding termination rate. These companies may of course implement accounting separation if they so choose and deliver it to the PTA.

5.4.4 Obligation for monitoring of tariffs

5.4.4.1 General

203. According to Article 32, Paragraph 1 of the Electronic Communications Act, PTA may impose on an electronic communications undertaking obligations concerning cost accounting systems for the provision of specific types of interconnection or access, if a market

analysis indicates that a lack of effective competition means that an electronic communications undertaking with significant market power is demanding excessively high prices or that the difference between wholesale and retail prices is abnormally small. As was stated in the discussion on competition problems the PTA considers that all companies that offer call termination in mobile phone networks can have an incentive to demand higher prices if there is no control on the company's pricing.

204. The PTA considers that the criteria for the above provision exist in this market. PTA is of the opinion that there is excessive pricing of voice calls originating in networks other than those in which termination takes place. Wholesale rates for call termination are, for example, often higher than the per-minute retail price, for voice calls within the same mobile network. It is PTA's opinion that the expense of off-net calls does not justify the approximate doubling of prices over and above the price of on-net calls. In PTA's opinion, this is, among other things, a consequence of the arrangement used for payment for call termination — that is, the CPP principle — wherein someone other than the company's own customers bears the expense, and is a result of limited price awareness among consumers. In PTA's opinion, this is a consequence of the fact the termination rate for calls between mobile phone networks is higher than costs warrant. There is also a considerable difference between the termination rates of those companies that are subject to price control and those who do not bear such an obligation. The PTA considers it undesirable that such a difference should be persistent. It is detrimental to consumer interests and reduces transparency in the market.

205. The PTA considers that according to the above there is little influence a reduction in termination rate and that it is thus necessary to control pricing of call termination in the mobile phone networks in question. Experience gained in this country and abroad shows that competition has not sufficed to reduce termination rates in line with the actual cost of providing termination services and that most of the regulatory authorities in Europe have imposed obligations in order to achieve a reduction in call termination rates. The PTA is of the opinion that the imposition of obligations concerning transparency, non-discrimination, and the publication of reference offers will not suffice to address the competition problems inherent in pricing.

206. The PTA considers that the obligation of monitoring of pricing on Siminn and Vodafone should be maintained. the PTA considers that in the light of the cost analysis that was recently conducted at Siminn and taking into account the reduction of termination rates elsewhere in Europe that these prices need to be further reduced. Additionally the PTA considers it necessary that all companies offering call termination in mobile phone network need to be subject to price control, as no incentive has been observed for normal price generation when obligations are not in place. In addition to this levelling of termination rates has to be aimed at in order to promote transparency and balance in the market. In choosing methods for monitoring prices the PTA has among other things referred to the common position of ERG regarding termination charges from February 2008 and to the recommendation of the EU regarding termination charges from May 2009 and to decisions taken by sister institutions in the EEA regarding call termination in mobile phone networks.

5.4.4.2 The common position of ERG

207. ERG, The European Regulators Group, issued a common position on call termination pricing on 28 February 2008; *ERG's Common Position on symmetry of fixed call termination rates and symmetry of mobile call termination rates ((ERG (07) 83 final 080312)*. In the conclusions regarding termination rates in mobile phones it is stated among other things that the ERG consider that id differing prices were allowed for the long term then that would

encourage lack of efficiency in the operations of mobile phone companies to the detriment of competition. It is thought that charges should as a rule be symmetrical, but that asymmetrical charges can be justifiable in certain circumstances for a given period of time if and only if there are valid reasons that justify this.

208. Among the things that could justify difference in prices is a difference in frequency rights and the small size of new companies. It could be in the interests of competition in the long term to allow new companies to have higher prices for a period of time.

209. The difference in costs could be attributed to differing frequency rights. The ERG thus considers that a company that only has 1800 frequencies will have higher costs than a company with 900 frequencies, as the 900 transmitters have a longer range and penetrate building more effectively. The cost of frequency rights is on the other hand rarely considered to justify differing call termination rates.

210. The ERG considers that costs for different frequency rights can last as long as the cost difference exists and points to ways for regulatory institutions to level companies' circumstances with regards to frequency use. They indicate the Commission Decision, Case IT/2007/0659, where it is admitted that frequency rights can lead to price differences.

211. ERG considers that price difference due to new entry of a company should be removed during a given glidepath. There is a large difference between countries regarding the glidepath companies have been allowed and the difference in price that has been customary. ERG considers that higher call termination rates for new companies should only be permitted to cover real additional costs and not to subsidise other services provided by the company.

212. New companies do not immediately achieve economy of scale and that could justify a difference in prices for some time. It is however not possible to use cost per unit at the start-up of operations as that would give too high a price. A fair difference in call termination rates has to be found. In assessing the length of the glidepath one has to take into account:

- When the company entered the market
- How saturated the market is
- Customer mobility
- The potential market share for the company
- The status of competition on the market

5.4.4.3 EU Recommendation on obligations related to call termination rates

213. the Commission published a recommendation regarding the intervention of regulatory authorities in call termination rates if mobile phone network and fixed line networks in May 2009; *COMMISSION RECOMMENDATION of 7.5.2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*. The Commission considered that obligations on call termination rates were not sufficiently homogeneous in the member states and decided to publish a recommendation that promoted harmonisation. The ESA has not issued to date an analogous recommendation for the EEA. The EU recommendation is largely based on the ERG document referred to above, from 2008.

214. The main principle according to the recommendations is that the regulatory authorities should prescribe that rates are based on the costs of a company operated in an efficient manner and that the rates should be comparable between all companies, i.e. symmetrical.

When analysing costs for termination it is recommended to use the bottom-up⁵⁰ LRIC model. The bottom-up can be compared with the top-down⁵¹ model for adjustments. The reference must be the most economic technical solutions on offer during the period of validity of the decision. This means that one must use the newest generation of networks (NGN) in the central part and a mixture of 2G and 3G in the access network. Should the regulatory body not have the capacity, either because of its size or because of a lack of funds, to introduce the LRIC methodology then it may use another method. Should it be demonstrated that this method returns results that accord with the objectives of the recommendation then the introduction of LRIC may be postponed until 1 July 2014. In certain circumstances the postponement may be further extended. The results from a method other than LRIC should not exceed the average termination charges of countries that use LRIC.

215. All deviation from the main rule on symmetrical termination charges should be based on circumstances outside the control of the company in question, such as unequal frequency licences. Should a new mobile phone company be so small that it does not achieve full economy in operations and bears as a result higher unit costs and should barriers to access and growth on the retail market be demonstrated, it is considered justifiable for the new company to maintain higher prices for up to four years from the date of its entry into the market.

216. New companies are allocated a glidepath to reduce their rates down to the same rate as other companies. The higher rates were to compensate for higher unit cost while economy of size was being achieved. Allowance is not made for a longer glidepath than four years from the date of a new company's entry into the market, unless something permanent causes the increased cost, such as unequal frequency licences. In accordance with the joint ERG position the four year limit is based on the assessment that on mobile phone markets one may assume that it will take 3-4 years from entry into a market for a company to gain 15-20% market share and thus achieve minimum economy of scale.

217. The recommendations do not affect decisions that were made before their publication, but all regulatory bodies will have adopted symmetrical prices no later than 31 December 2012, having taken into account the above factors that could lead to varying prices.

218. ESA has not yet issued an analogous recommendation to the one that applies in the EEA, but is being drafted. The PTA, or other EFTA regulatory bodies, have not yet been able to express an opinion about the proposed recommendation among other things regarding the maximum glidepath. It is thus not out of the question that the planned ESA recommendation will be in some way different from the EU Commission recommendation. In addition, such recommendations from ESA do not have direct legal influence nor are they binding instruments. Neither do recommendations from the EU Commission that have not been incorporated into the EEA agreement direct legal influence in this country, nor are they binding for the PTA.⁵²

⁵⁰ The costing tool related to bottom-up models produces cost references coming from *costs elaborated through an engineering network model*, which is a *hypothetical mobile network*.

⁵¹ The costing tool related to top-down accounting data produces cost references, which do correspond to direct references to *accounting records and asset registers*, and are based on *real existing mobile networks* and historical/current data.

⁵² Here one can refer to a ruling from the Appellate Committee for Electronic Communications and Postal Affairs no. 1/2009, dated 22. 22 May 2009, that deals with Siminn's appeal concerning the PTA market analysis of the wholesale market for transferring calls in fixed general fixed line networks (market 10). In that case the EU and ESA recommendations on the market in question were tested. One can also refer to the detailed

219. Despite the above the PTA intends to take into account the recommendation in question from the EU Commission on termination charges to the extent that it is appropriate for Icelandic circumstances on the termination markets in question. The PTA plans to make a statement on symmetrical termination charges and to state that termination charges should be related to costs in an efficiently operated network. On the other hand the PTA will not at this stage state that cost analysis shall be based on the going rate of the bottom-up LRIC model, as such is very expensive for telecommunications companies and for the PTA, and in addition to this such methods are time-consuming and require much preparation. The PTA also considers that the 4 year maximum glidepath for Nova is insufficient in the competition environment on the Icelandic mobile phone market. For this reason the PTA intends to plan for a 5 year glidepath for the company which will expire at the turn of the year 2012/2013, as is allowed for in the recommendation. IMC shall also level its termination charges in steps until they are the same as the prices of other companies at the same time. Regarding arguments for the glidepath for Nova and IMC one can refer to the discussion here below and to the detailed discussion in Chapter 7.3.4 in Appendix B.

5.4.4.4 Summary of methods in the EEA

220. In the document published by ERG in 2008, ERG (08) 45 Symmetry MTR/FTR Action Plan (final 081113) the status of call termination rates in member states is discussed. There it is stated that rates are symmetrical in seven states, The Czech Republic, Estonia, Lithuania, Luxembourg, Malta, Poland, Slovakia and Sweden. In twelve states a glidepath is in operation which aims at symmetrical rates within a few years. In Italy, Portugal, Spain and the UK one company is authorised to have a 10-20% higher rate at the end of the glidepath. Since then more states have prescribed symmetrical charges and it is thus clear that the main principle is that symmetrical call termination rates are in force or will soon be in force in most, if not all, EU countries.

221. According to information gathered in the above-mentioned ERG document from 2008 on price control methods within the EEA, 13 states have introduced LRIC, 6 build on comparison, 4 used historical costs and in 7 states the methodology was not specified. The large majority of countries use glidepath when reducing prices. From the above and from the development since 2008, one can deduce that the main policies within the EEA regarding price control are as follows:

- That LRIC is the preferred method, but it can be permissible to use other methods in the short term, including using historical costs as a basis. All states shall base their measures on the LRIC method no later than 1 July 2014 and shall use a clear current cost model.
- Symmetrical call termination rates shall be aimed at, but a difference in call termination rates can be justified for a difference in real costs due to temporary low market share or because of differing frequency rights for the duration of this difference.
- Companies are allowed to lower their prices in stages down to the target rate.

discussion by the PTA on this matter in Chapter 7.3.4 in Appendix B where the PTA answers Siminn's comments..

- New companies are given a period of acclimatisation to lower their prices to the same rate offered by the other companies. This glidepath period varies somewhat between states in accordance with the circumstances in each state but the aim is to have 4 years as a maximum.

5.4.4.5 The competition environment in Iceland

222. The PTA considers it fair that new companies⁵³ are given a satisfactory period of acclimatisation to lower their prices to the same rate offered by the other companies that have been on the market for a long time, because of higher unit costs until economy of size is achieved. Otherwise it would not be likely that new entrants would have a realistic possibility of entering the market with the existing arrangement of wholesale mark-up between networks.

223. There has been a considerable deceleration of new mobile phone users in the Icelandic market and there are clear indications that the market is nearing saturation, as the number of subscriptions has now exceeded the number of inhabitants. Such a situation presents a major financial risk for new entrants as it is expensive to gain the number of customers that would assure feasible operations for the long term.

224. For a long time there have not been realistic options for entry for new operators in the mobile phone market without these operators developing their own network. There have been problems of access to existing mobile phone networks, e.g. for roaming, virtual network access and resale access, and the pricing at wholesale level has been high⁵⁴. It is therefore important for parties that have invested in such development that they have a normal period of acclimatisation until they achieve economy of size.

225. It is clear that Siminn and Vodafone have in recent years priced call termination at wholesale level in excess of costs. At the same time these companies apply the pricing policy of pricing on-net calls at retail level much lower than off-net calls, without being able to demonstrate that the wholesale price warrants such a price difference. In addition to this the companies package especially various services for the corporate market. The above means that new entrants that only offer mobile phone service need to stretch themselves to the limit in order to attract customers, with the cost that this entails.

226. On the Icelandic market there are 5 service providers (4 of them operate networks) so there are limits to how mobile customers can be in reality. One can assume that mobility of customers will have increased considerably from the time when only Siminn and Vodafone operated on the market. This applies particularly after Nova entered the market and not least when IMC/Alterna entered the market in April of this year. One can also allow for mobility of customers being greatest among the youngest age groups and less among older customers and among customers who wish to have all their telecommunications services with one party. It can be difficult for a new party to gain the necessary market share to achieve the necessary market share, i.e. the number of customers that support the investment and operational costs, while at the same time spending substantial amounts on marketing in the first years of operations to gain customers from their competitors.

⁵³ New companies here refers to Nova and IMC/Alterna. Nova commenced operations in 2007. In the opinion of the PTA one can categorise IMC/Alterna as a new company in the sense that the company did not commence domestic operations to any significant degree before 2009 though IMC had been granted a frequency licence in the year 2000. This of course also applies to other new mobile phone companies that may commence operations on the Icelandic mobile phone market.

⁵⁴ This is now improving as the PTA has recently endorsed a reference offer and cost analysis from Siminn for roaming, resale access and virtual network access.

227. The Icelandic market is very small in an international context, which means that companies need to have gained a sizeable part of the market (20% or more) before enjoying economy of size. A large investment and high costs mean that operational performance can be very poor in a new entrant's first years on the market. The PTA considers it not realistic for a company to reach minimum economy of size in a shorter space of time than 4-5 years from entry.

5.4.4.6 PTA proposals for monitoring price lists

228. As stated before the PTA considers it necessary to maintain obligations on monitoring of tariffs for call termination in mobile phone networks. The PTA further believes it necessary to impose these obligations on those companies on which they have not yet been imposed and that the call termination rates on the market need to be levelled.

229. PFS considers that because of the small size of the market and of the considerable cost and effort required both from parties to the market and from the PTA for the implementation of a going rate bottom-up⁵⁵ LRIC model, then for the time being it is not right to prescribe the implementation of such a model. Instead of this, historical costs shall be used as a basis to enter values into a model that is designed in line with the LRAIC⁵⁶ methodology (top-down model)⁵⁷. The PTA also considers that the Siminn mobile phone network is the only network in the country that can reflect real costs for call termination in a mixed GSM/UMTS network with countrywide distribution.

230. Siminn has, in accordance with the PTA request, presented cost analysis for call termination in its joint GSM/UMTS network. The cost analysis is based on historical costs to enter values into a model that is designed in line with the LRAIC methodology. When applying the LRAIC methodology the long term average of additional costs is calculated as a direct average unit cost and in addition the common costs are distributed with proportionately equal weighting on units (EPMU⁵⁸). The above implementation is known as LRAIC+. The PTA has now examined Siminn's cost analysis for termination of calls in the company's mobile phone network, see the PTA Decision no. 9/2010 regarding cost analysis of Siminn wholesale prices for call termination in GSM and UMTS mobile phone networks from 16 April 2010. The institution considers that Siminn's analysis, that states that termination charges shall be ISK 3.98/min having taken into consideration the changes made by the PTA, gives a true picture of costs for call termination in an efficiently operated mobile phone network. The PTA's conclusion is that the call termination price to aim for in the coming years in ISK 4.0/min, with reference to the conclusion of the Siminn cost analysis having regard to the PTA changes. The PTA decision to use ISK 4.0 as the reference price is within the price range that the institution published in its preliminary draft of this market analysis in October 2009, i.e. ISK 4.0-4.5 /min..

231. The PTA will scrutinise annually each new Siminn cost analysis and will update the price adaptation in accordance with the conclusions in each instance. As it is likely that rates will change subsequent to the annual review it is impossible to say exactly at this stage what

⁵⁵ The costing tool related to bottom-up models produces cost references coming from **costs elaborated through an engineering network model**, which is a **hypothetical mobile network**.

⁵⁶ LRAIC: Long-run average incremental cost. The costs that are additional or that are saved when a specific operation is added or discontinued using the criterion that all costs are variable.

⁵⁷ The costing tool related to top down accounting data produces cost references, which do correspond to direct references to **accounting records and asset registers**, and are based on **real existing mobile networks** and historical/current data.

⁵⁸ Abbreviation for: Equi-proportional common cost.

the final outcome will be as the price adaptation will not converge on the final rate until three years into the process. In this document the PTA will use the amount of ISK 4.5 as a reference, i.e. the ceiling of the range 4 - 4.5, but the proviso has to be made that there might be changes in accordance with the above.

232. The PTA has made a comparison between Siminn's termination charges based on historical costs and costs that were obtained using the LRIC calculations in other European countries. The Siminn costs are among the lowest in that comparison. The above supports the PTA conclusion that the Siminn mobile phone network should be considered an efficiently operated network and can thus be considered a reliable reference for glidepath on the wholesale market for call termination in individual mobile phone networks in Iceland.

233. As it is generally considered that all companies should be able to achieve the same efficiency in operations, it is normal to plan that all companies will offer the above rate for call termination, with a proviso on possible changes to this rate subsequent to new cost analyses, after a given time, as the PTA intend to review call termination rates annually on the basis of the cost analysis in each instance as discussed above.

234. Despite repeated requests, Vodafone did not provide a cost analysis for call termination in its mobile phone network. The PTA considers it in accordance to obligations in Market 16 that neither Siminn nor Vodafone were obliged to provide such a cost analysis. It is the view of the PTA that as Siminn and Vodafone have a comparable amount of call termination traffic from other networks and as their mobile phone networks are similar in size, then Vodafone call termination rates will be the same as those of Siminn in each instance. It would of course be an option to model the call termination rate on a cost analysed rate from a mobile phone company other than Siminn, if such a cost analysis gave a lower rate than the Siminn cost analysis. The network operated at the lowest cost in each instance is thus the efficiently operated network.

235. As this is a sizeable reduction for all the companies on the market, the PTA thinks it normal that the reduction be implemented in stages and that full homogeneity of rates will be achieved in just under three years, or around new year 2012/2013

236. Vodafone came into being with the merger between Tal, which began operations in 1998, and Íslandssími which began GSM operations in 2001. There were no obligations on Vodafone before 2003. The company did not have to reduce its rates before 2006 and parity in rates between Siminn and Vodafone before 2008. Vodafone was then granted a glidepath of at least 7 years from entry into the market. In the PTA's last decision on call termination rates from July 2006, a 38% reduction was decided on Vodafone's rates and 16% reduction on those of Siminn with a 2 year glidepath, which ended with the two companies having the same call termination rates from and including 1 June 2008. As this was a proportionately similar reduction for both companies the PTA considers it normal to reduce the Siminn and Vodafone rates to ISK 4, or to the rate that may be returned by an updated cost analysis, over less than three years.

237. The PTA considers it not justifiable that the difference in rates between Siminn and Vodafone on the one hand and Nova and IMC on the other, be persistent. It is thus proposed that all companies converge on the same rate at the end of the glidepath. Nova currently has frequency rights on all the same frequency rights as Siminn and Vodafone. Difference in frequency rights can thus not be justification for a persistent difference in call termination rates. Given that the reduction in rates takes place during the period 1 September 2010 to 1

January 2013 then 5 years will have passed from the time that Nova entered the market and thus the period of acclimatisation considered normal by the PTA given the circumstances in this country will have passed, see Chapter 5.4.5.5 above and the ERG opinion above and the recommendation of the EU Commission, having taken into account the circumstances in Iceland.. Nova's current market share indicates that it is not unrealistic to expect that the company will achieve 20% market share by number of customers during the period and thus the minimum for economy of size as estimated by the PTA. On the other hand, Nova's market share is much lower by income from its own customers than by number of customers or by minutes. The company thus needs time to increase its income from its own customers at the same time as termination charges are being reduced in steps

238. IMC has a more limited frequency licence than the other companies, but against this there is the fact that the company has had nine years on the market to benefit from the rights granted by the frequency licence in the company's international operations which have provided the company with income. In addition the company's network in this country is very simple in structure, with only one transmitter in each municipality in a very limited area of coverage. The company has made a roaming agreement with Siminn and aims to develop and invest in its mobile phone network in the coming years. IMC's sister company, Alterna, launched a marketing campaign on the Icelandic mobile phone market in April 2010. It is therefore more difficult to predict the development of market share for IMC than for Nova, but given the criteria of the above-mentioned roaming agreement IMC/Alterna is aiming for a significant market share over the next 2-3 years. Despite the fact that IMC has been on the Icelandic mobile phone market since the year 2000, mostly inactive up to this point in time, one can in a way maintain that the company is a new entrant into the market. However, with the company's history in mind, the PTA considers that it is not justifiable to grant IMC/Alterna a longer glidepath to symmetrical termination charges than to 1 January 2013. The fact that IMC has much less distribution requirements and thus requires a smaller system than Nova, is considered to support this conclusion. The above-mentioned roaming agreement between IMC and Siminn seems more like virtual network access than the actual development of an own system, with attendant investment. This also means that IMC can achieve economy of size sooner and with a smaller market share than as a network operator, as the company's costs are mainly variable costs. This was not possible for Nova because of the distribution obligations in the company's frequency licence.⁵⁹

239. The PTA intends to impose the obligation of monitoring tariffs on Siminn, Vodafone, Nova and IMC. The obligation means that the call termination rate in GSM and UMTS mobile phone networks will be reduced to ISK 4 per minute, or to the rate that may be returned by an updated cost analysis, for all the companies as is specified in table 5.1. The table is based on a final rate of ISK 4.0 but the PTA repeats that this can change subsequent to a cost analysis. All call termination rates are reduced in descending steps and at the same time the proportional difference between rates is reduced. This is a case of maximum wholesale price per minute⁶⁰ ex VAT, so individual mobile phone companies can offer lower termination charges prior to what is prescribed there should they so choose. They must of course comply with the non-discrimination obligation and may not discriminate between companies on the basis of subjective criteria. The Nova connection rate is ISK 0.6 and IMC ISK 0.7 which reduces to ISK 0 with the first reduction on 1 September 2010.

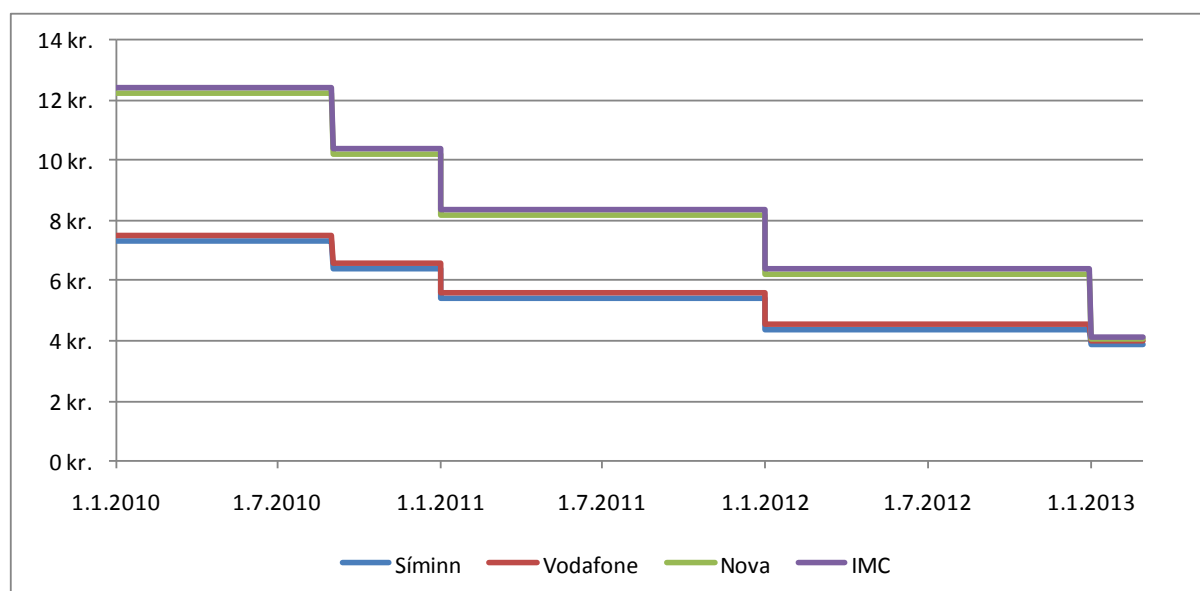
⁵⁹ Detailed arguments for the length of glidepath for Nova and IMC can be found in Chapter 7.3.4 in Appendix B.

⁶⁰ When making invoices the total time for each invoice period is calculated as the sum of registered traffic seconds of all calls for which termination is charged, converted to minutes.

Table 5.1 Reduction of call termination rates in GSM/UMTS mobile phone networks up to 1 January 2013

Company	Unit	Price from Decision	Price from 1.9.2010	Price from 1.1.2011	Price from 1.1.2012	Price from 1.1.2013
Síminn	ISK/min.	7.49	6.5	5.5	4.5	4.0
Vodafone	ISK/min.	7.49	6.5	5.5	4.5	4.0
Nova	ISK/min.	12.0	10.3	8.3	6.3	4.0
IMC/Alterna	ISK/min.	12.0 ⁶¹	10.3	8.3	6.3	4.0

Figure 5.2 Reduction of call termination rates in GSM/UMTS mobile phone networks up to 1 January 2013⁶²



Source: National Regulatory Authorities/IRG

240. Should verified and substantial changes in costs for an efficiently operated mobile phone network be shown in the above period or if call termination rates in this country are substantially higher than rates in analogous markets, then the PTA reserves the right to review this decision on rates before its scheduled duration is complete. The PTA will assess annually the above aspects during the period of validity of the decision and will update the glidepath in accordance with the updated cost analysis. This will be done without the PTA making a new

⁶¹ The IMC termination charge is ISK 12 to parties other than Síminn. The termination charge to Síminn is ISK 7.49 for calls originating in Síminn's fixed line and/or NMT networks, but calls from Síminn's mobile phone network that terminate in IMC's system are priced as though they were on-net calls in Síminn's mobile phone network, i.e. both origin and termination of these calls is priced at ISK 6.53.

⁶² In the current Nova and IMC rates the connection rate is taken into account and is calculated on the basis of a 2 minute call.

market analysis on the relevant market as the above only involves technical implementation of an obligation. Such changes however call for domestic consultation and full consultation with ESA prior to a final decision on changes being made.

241. When the call termination rate is cost analysed a cost model shall be made in accordance with the LRAIC methodology. It is authorised to base it on historical data for the purpose of entering values into the LRAIC model for the service in question.

242. Should there be no correlation between the development of wholesale and retail prices during the lifespan of the market analysis here under discussion, despite considerable reduction in termination rates, then the PTA considers it clear that it will have to impose retail obligations, see Paragraph 2 Article 27 of the Electronic Communications Act.

243. In the light of the predictable cessation of the NMT system on the 1st of September 2010 and of the small size of the NMT market the PTA does not think it right to demand that work be done on cost analysing call termination rates in the NMT network. It is not possible to use comparison with other countries as NMT service has been discontinued in most European states. The obligation for non-discrimination could have some effect on pricing in NMT as other departments in Siminn also have to buy call termination in the NMT network. Though non-discrimination on its own is generally not a guarantee for acceptable call termination rates the PTA considers it right to proceed no further in this instance in order not to overburden the operation of the system. For these reasons the PTA intends to maintain the obligation on Siminn that it should not charge higher rates for call termination in the NMT network than were in force on 31 December 2005, i.e. ISK 14.4 day rate and ISK 13 night rate and ISK 0.68 connection rate.

5.4.5 Cost accounting

244. Cost accounting is necessary when obligations on monitoring price lists have been imposed and are based on prices from a cost analysis. As the PTA intends to decide call termination rates with reference to a cost analysis by Siminn (unless another mobile phone network operator demonstrates a more efficiently operated network) it plans to impose the obligation of cost accounting on the company and that Siminn deliver a cost analysis by 1 July annually, based on operating figures for the previous year. . Siminn is obliged to deliver the next cost analysis by 1 July 2011. The obligation of cost accounting is supported by obligations that the rates relate to costs and are necessary for implementing the accounting separation and can support monitoring of non-discrimination.

245. In order for Siminn to be able to show that the rates relate to costs it is necessary to set up cost accounting that captures, recognises, assesses and distributes the costs in question of the goods or services in accordance with recognised principles, i.e. cause and effect.

246. Siminn has already delivered to the PTA a description of the cost accounting for call termination in mobile phone networks and has published the main cost categories and the principles used to allocate costs. Siminn is obliged to maintain this cost accounting in accordance with the PTA instructions. Siminn shall deliver to PTA a report from an independent auditor that confirms that the Siminn description for the PTA of cost division is analogous with the implementation in the company's cost accounting system.

247. Siminn has implemented the LRAIC cost model, which is based on historical data for calculations of call termination costs (top-down model), which has been delivered to the PTA. PFS considers that because of cost and considerable effort required both from Siminn and

from the PTA for the implementation of a full LRIC model (bottom-up model), then for the time being it is not right to prescribe the implementation of such a model. Thus it will be permissible to base values to be entered into the model on historical data. If the methods that the PTA plans to prescribe regarding price control do not return acceptable results and the call termination rates in this country in the near future remain high compared to rates in analogous markets then the PTA reserves the right to demand that a LRIC model (bottom-up model) be implemented before the scheduled period of validity of the decision in the relevant market expires.

248. The PTA considers there to be no need for other companies to be subject to an obligation for cost accounting for call termination in a mobile phone network. The reasons that Siminn is chosen to keep cost accounting and deliver the cost analysis to the PTA include the fact that Siminn has already made such an analysis and the obligation is thus not a great burden on the company and in addition Siminn is the largest company on the market with the longest history of operations and is thus most likely to be able to operate efficiently in call termination. The PTA thus does not intend to impose the obligation of cost accounting on other companies. They are however free to keep such books and to provide the PTA with their cost analysis if they feel it is necessary to give a true picture of their costs. The PTA however emphasises that call termination rates should be based on a company that is operating efficiently and thus it is not possible to take inefficient operations into account unless there are special circumstances and in such a case only for a limited period of time.

249. The PTA considers that without the obligation of cost accounting, Siminn and other companies could possibly price their services on the relevant market above cost and have an abnormally small difference between wholesale and retail rates that have negative consequences for competitors and users. Without the obligation for cost accounting the PTA could not ensure that rates would be based on cost and prevent problems of this kind. The PTA thus intends to impose the obligation of cost accounting on Siminn for call termination.

5.5 Assessment of the impact of obligations

250. It has to be assessed whether the burden on companies resulting from the imposition of obligations is reasonable in the light of the objectives. The obligations that the PTA plans to impose are on the whole quite a burden for the companies. The PTA however considers them to be in accordance with the principle of proportionality and that they are not more of a burden than they need to be. The PTA has decided e.g. to lift the obligation on transparency and on the publication of a reference price list and the non-discrimination obligation regarding on-net calls as the PTA does not consider them necessary at this stage. The obligations are in other respects similar to the obligations that have applied to the relevant market, but some of the obligations are now imposed on new companies on the market, as it has come to light that the same competition problems apply to them on the wholesale market in question as to the companies that were already on the market.

251. As is shown above the PTA considers it necessary to impose the obligations in question on the companies on the relevant market. As other obligations are not better suited to achieve the desired results, the PTA considers that with the initial investment in mind and the risk taken with the investment that the demands are not unreasonable.

5.5.1 The necessity to impose the obligations in question

252. In accordance with the principle of proportionality it is normal to assess the necessity of imposing the obligations that have been described above. The obligations are suited to

achieve the objectives of the Electronic Communications Act No. 81/2003 of active competition and efficient electronic communications. In the light of the competition problems that exist, the strong position of each company on the relevant market in their networks, the PTA considers it necessary to impose all the above-named obligations on mobile phone companies in order to promote increased competition and to assure consumers' interests. The PTA considers each single obligation necessary and in the PTA's examination of the relevant market it came to the conclusion that no other measures are to be found that can be as effective in solving the competition problems on the relevant market.

253. The obligation on access to call termination at wholesale level is a prerequisite for active competition to thrive on the mobile network market. It is not possible to solve the competition problems described here above by other means than imposing the obligation of access to call termination.

254. The obligation of non-discrimination regarding termination of calls from other mobile phone networks or fixed line networks is necessary so that companies, whether on the fixed line network market or the mobile phone market, can compete on the basis of non-discrimination. The obligation should result in a situation where all electronic communications companies that buy call termination, receive comparable services and prices, thus solving the competition problem relating to discrimination.

255. The PTA considers it necessary to prescribe accounting separation in those companies that have varied operations, among other things because it is a prerequisite to being able to analyse adequately the costs related to the operation of a mobile phone network. The PTA considers that it is not possible to use other measures if cost analysis is to be based on historical data. In addition the obligation is a prerequisite for being able to monitor whether non-discrimination is applied in regarding charges to a company's own retail departments on the one hand and those of unrelated companies on the other.

256. The PTA believes that the obligation of monitoring of pricing is absolutely necessary as experience shows that mobile phone companies have no incentive to offer non-excessive call termination rates at their own initiative. The PTA considers that the rates offered today are too high, whether in relation to the big difference in price between on-net and off-net calls or by the cost analysis in call termination that was done by Siminn. The PTA considers that the obligation of monitoring of pricing will lead to more efficient operation of mobile phone networks which will in turn eventually lead to lower prices for consumers.

5.5.2 The impact of obligations

257. It has to be assessed whether the burden on companies resulting from the imposition of obligations is reasonable in the light of the objectives. The obligations that the PTA plans to impose on the companies are on the whole quite a burden. The PTA however considers them to be in accordance with the principle of proportionality and that they are not more of a burden than they need to be. The obligations are in many respects similar to the obligations that have applied to the relevant market, but the obligations for non-discrimination and transparency are lifted. The non-discrimination obligation is also lifted for on-net calls. With the lifting of the transparency obligation the obligation on Siminn and Vodafone to publish openly accounting information about company performance in mobile phone networks is also lifted. In addition, some of the obligations are imposed on new entrants to the market.

258. As is shown above the PTA considers it necessary to impose the obligations in question on mobile phone companies. As other obligations are not better suited to achieve the

desired results, the PTA considers that with the initial investment in mind and the risk taken with the investment that the demands are not unreasonable.

259. The obligation for access is an insignificant burden on the companies but is a prerequisite for active competition in the relevant market. It is not possible to solve the competition problems described here above by other means than imposing the obligation of access. It is in reality necessary for mobile phone companies to offer interconnection with other networks in order to be able to offer their customers adequate service that enables them to connect to any user they choose. Such interconnection is in fact an obligation according to Article 24 of the Electronic Communications Act. The obligation is first and foremost to ensure that companies do not discriminate when making interconnection agreements and do not delay the entry of new companies by delaying negotiations. It cannot be considered a burden to have to handle all counterparties in interconnection negotiations in the same manner. Interconnection with other networks gives companies better use of the electronic communications equipment in which they have invested.

260. The PTA considers the obligation for non-discrimination to be not much of a burden, as it cannot be seen that it involves any particular costs or effort. In addition the non-discrimination obligation has been limited to the termination of calls originating in other mobile phone networks or fixed line networks and not on-net calls.

261. The PTA considers that the obligation for accounting separation is not a burden given its purpose, as it is part of normal operations of a modern company to separate cost in production/operation of differing goods or service that the company sells. Siminn and Vodafone already have accounting separation bookkeeping and the PTA does not intend at this stage to impose this obligation on the smaller companies on the market.

262. The PTA considers that the obligation of cost monitoring is something of a burden. It is clear that the companies will lose some income as a result of this obligation but on the other hand they do make savings against this by paying lower call termination rates to their competitors. The PTA considers that in the light of how necessary the obligation is to solve competition problems, as described above, it is not an excessive burden. the PTA considers that the rate specified in the planned obligation gives at this point in time a true picture of the cost of call termination in a company operating efficiently and that the thus the companies are assured normal recompense for the service if they operate efficiently. A rather generous glidepath is allocated for the new pricing by company and it seems reasonable to assume that in the time given they should be able to adapt their operations, costs and income to the new arrangement.

263. Cost analysis has been done at Siminn and Siminn only needs at the current time to maintain the cost analysis methods that it has introduced. It is not a demand that other companies on the market do special cost analysis. The obligation for cost analysis is thus on the whole not a particular burden for the companies on the relevant market.

264. The obligations will not inhibit the development of efficient mobile phone networks as the pricing for call termination will be based on cost and will allow for a reasonable return on investment. Monitoring of tariffs should thus not inhibit willingness for long term economic investments.

265. The PTA considers the above obligations to be normal and necessary for the support of active competition and that they should not be considered unnecessarily burdensome. The

PTA considers that the obligations serve competition in the long term and that they are such that they should increase the service offer on the mobile phone service market and in the electronic communications market as a whole.