

Annex A



**POST- AND TELECOM
ADMINISTRATION**

- Market Analysis -

Wholesale markets for origination, termination, and transit service for voice calls on fixed public telephone networks (Markets 8-10)

31 October 2008

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Summary and conclusions

This document contains the Post and Telecom Administration (PTA) analysis of the wholesale markets for voice call services on fixed line networks, which correspond to Markets 8-10 in the ESA Recommendation. The market analysis is the foundation for the imposition of sector-specific obligations on electronic communications undertakings that are designated as having significant market power (SMP).

This document has been presented as the foundation for consultation and contains the results of PTA's analysis of the above-mentioned markets. PTA invites the EFTA Surveillance Authority (ESA) to make comments on the market analysis and the conclusions derived therefrom.

At the present time, two undertakings operate in the relevant markets: Síminn hf. (Síminn) and Og fjarskipti ehf. (Vodafone). Síminn is the larger of the two and has a very large market share in the voice call services market, at both wholesale and retail levels. Síminn controls an extensive voice call network, which it is difficult or impossible for competitors to duplicate. PTA considers that Síminn has a dominant position in the wholesale markets for voice call services and that effective competition cannot flourish during the expected horizon for this analysis unless special measures are taken. Though entry into this market is easier in some respects than it was previously, Síminn enjoys economies of scale and scope, a strong position in a mature market, and vertical and horizontal integration, and it can offer comprehensive services all over Iceland.

PTA intends to designate Síminn as having significant market power in the following wholesale markets:

- The market for voice call origination on the public telephone network provided at a fixed location (Market 8)
- The market for voice call termination on individual public telephone networks provided at a fixed location (that is, Síminn's voice call network) (Market 9)
- The market for transit services in fixed public telephone networks (Market 10).

The obligations that PTA intends to impose on Síminn in the relevant markets are as follows:

- Obligation to grant access
- Non-discrimination
- Transparency (including the publication of a reference offer).
- Accounting separation
- Obligations concerning price controls and cost accounting.

As regards voice call termination on telephone networks (Market 9), each network is viewed as a separate market. There are several reasons for this. First, only the network operator itself can provide call termination in its own network (monopoly on voice call termination in own network), and demand at the wholesale level is dependent on supply, as the caller's operator has no choice but to purchase call termination from the network operator to which the call is placed. Second, the charge for call termination is determined by the operator that provides the service, and according to the current arrangement, its customers generally have little interest in making an impact on that charge, as they do not pay for termination of voice calls placed to

themselves; it is the caller who pays for call termination (the Calling Party Pays principle, or CPP). It is PTA's opinion that both supply-side substitutability and demand-side substitutability for call termination in voice call networks are insufficient to make an impact on market definition at both the retail and the wholesale levels. Currently available technology does not provide for voice call termination in telephone networks by any party other than the service provider of the party to whom the call is placed. In addition, price awareness among telephone users does not seem to be great, and this further reduces the possibilities for control and mobility.

PTA has therefore come to the conclusion that each telephone network operator has a 100% market share in its own network and that there are no factors such as countervailing buying power that could prevent these operators from having significant market power. For this reason, PTA intends to designate Vodafone as having significant market power in Market 9 for call termination in individual telephone networks.

The Administration intends to impose the following obligations on Og fjarskipti ehf. (Vodafone) in the relevant market:

- Obligation to grant access
- Non-discrimination
- Transparency
- Price controls

1.0 Introduction

1.1 General

1. This document contains the Post and Telecom Administration (PTA) analysis of Iceland's wholesale markets for voice call origination on the public telephone network provided at a fixed location (Market 8), voice call termination on individual public telephone networks provided at a fixed location (Market 9), and transit services in fixed public telephone networks (Market 10). It begins with a definition of the service and geographical markets and continues with a definition of the relevant market. If circumstances warrant it, one or more operators are designated as having significant market power (SMP),¹ and appropriate remedies or obligations are imposed on them. The market analysis is the foundation for the imposition of sector-specific obligations on electronic communications undertakings that are designated as having significant market power (SMP).

2. This document is presented following domestic consultation pursuant to Article 6 of the Act on the Post and Telecom Administration, no. 69/2003, and contains PTA's conclusions and a draft decision concerning the relevant market. PTA received comments from market participants and the Competition Authority and has revised the draft upon consideration of those comments before sending it to ESA for consultation, cf. Article 7, Paragraph 1 of the same Act. If ESA does not present comments on PTA's analysis and conclusions, they are then sent to the operators in question.

3. When the preliminary draft was published for consultation on 31 March 2008, news had been received of the purchase by Teymi hf., parent company of Vodafone, of a 51% stake in IP-fjarskipti and the proposed merger of IP-fjarskipti and Ódýra símafélagid ehf., a subsidiary of Teymi hf. Because it was clear that the Competition Authority investigation of the merger could take up to four months and it was unclear what the results would be, PTA did not revise its original draft to take account of the proposed merger. With a decision dated 13 June 2008, the Competition Authority approved the merger.² After the deadline for the preliminary draft analysis had past, PTA received information that, in addition to the discussed merger, Vodafone had purchased all of IP-fjarskipti's electronic communications systems, including the telephone network. Today IP-fjarskipti operates solely as a resale agent under the brand name Tal; therefore, it no longer operates on the wholesale markets under scrutiny here. PTA revised its draft market analysis in view of this information, and stakeholders were given the option of commenting on the revised draft, which was sent to them for consultation on 26 September 2008.

4. Markets and market analyses are subject to change and will be reviewed regularly. Markets that change constantly and considerably must be re-evaluated within a reasonable time limit. Markets are analysed with respect to immediate future developments wherever possible. The time period that is used as a reference should reflect the characteristics of the relevant markets and the estimated time until the next analysis of that market takes place.³ In

In English: "significant market power (SMP)".

² See Competition Authority Decision no. 36/2008, dated 13 June 2008.

³ See Paragraph 20 of the 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

most instances, it is reasonable to assume a time horizon of two to three years.

1.2 Current electronic communications legislation

5. On 25 July 2003, new legislation on electronic communications entered into force in Iceland. The new Act, no. 81/2003, implements four EU directives on electronic communications⁴ and one directive on the protection of personal privacy in electronic communications.⁵ The Electronic Communications Act is intended to create homogeneous operating conditions for European electronic communications operators, limit entry barriers, and create conditions for sustainable competition for the benefit of users.

6. The Electronic Communications Act obliges PTA to define certain electronic communications markets, both in terms of service and product types and in terms of geographical demarcation, in accordance with the fundamental principles of competition law and the obligations pursuant to the European Economic Area (EEA) Agreement. Furthermore, PTA is required to analyse the defined markets and determine whether they are characterised by effective competition. If PTA comes to the conclusion that there is effective competition in the relevant market – that is, that no operator has significant market power – it is prohibited from imposing obligations on the operators in that market. If the Administration has previously imposed obligations on undertakings in the relevant market, these shall be withdrawn and no new obligations imposed. On the other hand, if PTA concludes that the relevant market is not characterised by effective competition because one or more operators has significant market power, the Administration is required to designate the operator(s) concerned as having SMP and to impose appropriate obligations on them. PTA is required to impose at least one obligation on any undertaking so designated. If the undertaking has previously been designated with SMP in accordance with previous electronic communications legislation, PTA shall re-examine the obligations that have been imposed and decide whether they shall be maintained, amended, or withdrawn.

7. The European Commission has published guidelines and a recommendation concerning market analysis. First, there are guidelines for market analysis and the assessment of SMP,⁶ and second, there is a recommendation concerning the relevant markets.⁷ The EFTA

and services referred to in Annex XI of the Agreement on the European Economic Area, EEA Supplement no. 21 of 27 April 2006 (Icelandic version).

⁴ Directive of the European Parliament and of the Council, no. 2002/19/EC, of 7 March 2002, on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive).

Directive of the European Parliament and of the Council, no. 2002/20/EC, of 7 March 2002, on the authorisation of electronic communications networks and services (Authorisation Directive).

Directive of the European Parliament and of the Council, no. 2002/21/EC, of 7 March 2002, on a common regulatory framework for electronic communications networks and services (Framework Directive).

Directive of the European Parliament and of the Council, no. 2002/22/EC, of 7 March 2002, on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

⁵ Directive of the European Parliament and of the Council, no. 2002/58/EC, of 12 July 2002, concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

⁶ 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.

⁷ Commission Recommendation and Explanatory Memorandum on Relevant Product or Service Markets within the Electronic Communications sector susceptible to ex ante regulation in accordance with directive 2002/21/EC, 11/02/2003, C(2003)497.

Surveillance Authority (ESA) has issued comparable guidelines⁸ (hereinafter referred to as “Guidelines”) and a recommendation⁹ (hereinafter referred to as “Recommendation”). PTA will take these and the guidelines and recommendation from the European Commission into consideration in carrying out its market analyses. In addition, the Administration will consider the report by the European Regulatory Group of National Regulatory Authorities (ERG¹⁰) concerning remedies that may be imposed on electronic communications undertakings with significant market power in order to promote competition.¹¹

8. The ESA Recommendation on relevant markets identifies 18 electronic communications markets that PTA is required to analyse pursuant to the Electronic Communications Act and Iceland’s obligations according to the EEA Agreement. The Electronic Communications Act also requires that PTA define these markets in accordance with the conditions reigning in Iceland. In this respect, PTA’s market definition may differ from that assumed in the Recommendation. Furthermore, PTA is authorised to investigate all relevant electronic communications markets for the purpose of its market analysis, whether these are identified in the Recommendation or not.

1.3 PTA's execution of the market analysis

9. As is stated in the PTA introductory document on market analyses, the implementation of a market analysis can be divided into three phases:¹²

- 1) Definition of the relevant service markets and geographical markets;
- 2) Analysis of each of the defined markets, assessment of whether there is effective competition in those markets, and decision on whether one or more undertakings has significant market power;
- 3) Decision on whether it is necessary to impose, maintain, amend, or withdraw obligations on undertakings with significant market power.

This document contains PTA’s conclusions for all three phases. These conclusions are based on PTA’s preliminary draft analysis of the relevant markets, which were presented for consultation with a letter dated 31 March 2008, and the revised draft, which was presented on 26 September 2008.

10. PTA has compiled information regularly on the relevant market from the undertakings

⁸ See Footnote 2.

⁹ EFTA Surveillance Authority Recommendation of 14 July 2004 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 communication networks and services, as incorporated into the Agreement on the European Economic Area; EEA Supplement no. 21 of 27 April 2006 (Icelandic version).

¹⁰ Abbreviation for “European Regulatory Group of National Regulatory Authorities”.

¹¹ 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 found at:

http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

¹² Introductory document on market analysis, prepared by PTA, first published in October 2003 and updated in August 2005. See:<http://www.pfs.is/upload/files/Kynningarit%20um%20markaðsgreiningu%20-%202005%202.pdf>.

operating in it. With a letter dated 1 March 2004, PTA sent registered electronic communications undertakings a questionnaire on Markets 1-6 and 8-10. Furthermore, all stakeholders were given the option of sending in comments. Five electronic communications undertakings sent the Administrations answers to the questionnaires. With a letter dated 24 February 2006, PTA gave all registered electronic communications undertakings a second opportunity to submit comments on Markets 8, 9, and 10. On that occasion, none of the undertakings sent new or amended answers to the questionnaires. The Administration has compiled information, including statistical data, and has conducted informal interviews with market participants. Statistical data, including data on all voice call markets at the wholesale and retail levels, are compiled from all market operators every six months. PTA compiles and records data on all changes in price lists as soon as those changes are published. The preliminary draft analysis of the relevant markets was published for comment on 31 March 2008, and comments were received from Síminn, Vodafone, and the Competition Authority. Following the first round of comments, PTA compiled further information on the market for call transit and on Vodafone's acquisition of IP-fjaraskipti's electronic communications networks. PTA revised the earlier draft to take account of the comments and new information and presented it once again for comment on 26 September 2008. Deadline for comments was to 17 October 2008. Síminn sent in comments after the deadline. PTA however decided to include the comments in this instance. The comments received on both drafts have been summarised and are answered in Annex B accompanying the draft decision concerning Markets 8-10. The analysis of the relevant markets has also been updated to reflect the comments that were considered, and all statistical data have been updated to coincide with the most recent available figures.

1.4 Market definition

1.4.1 General

11. Pursuant to Article 16 of the Electronic Communications Act, no. 81/2003, with subsequent amendments, PTA must define product and service markets¹³ and geographical markets in accordance with the principles of competition law and obligations under the EEA Agreement. As has emerged, it is necessary that PTA assess whether the markets as they have been defined in the Recommendation reflect conditions in Iceland. It is necessary to define both the service market and the geographical market before it is possible to determine whether market conditions warrant the imposition of obligations.

1.4.2 Product and service markets

12. In Article 4 of the Competition Act, no. 44/2005, a market is defined as the sales area for a product and substitute product and/or the sales area for a service and substitute service. Substitutable products and services are defined as products or services that can, wholly or to a significant extent, take the place of other products or services, not only on the basis of the objective characteristics of the product in question, the purchaser's intended use of it, and its price, but also with respect to competition requirements and/or conditions relating to supply and demand. Products that can compete with one another are therefore called substitutable products, and each market consists of products that are mutually substitutable. Products that can substitute for one another only to a limited extent are not considered to belong to the same market.

¹³ Hereinafter, the terms "product" and "service" will be used interchangeably.

13. Substitutability is assessed from two points of view: first, how readily customers believe that one product can substitute for another (demand-side substitutability); and second, how easily a competitor of a given undertaking can adapt his production so that his product falls within the market to which a product of the given undertaking belongs (supply-side substitutability).¹⁴

14. Demand-side substitutability is considered the foundation of the market definition, while supply-side substitutability is less meaningful and is often related instead to an assessment of potential competition. Potential competition is the third competition factor that affects undertakings' behaviour. The difference between potential competition and supply-side substitutability is that supply-side substitutability takes place on shorter notice than does potential competition. In addition, supply-side substitutability does not require as much investment as new undertakings must engage in when they enter a market. An assessment of potential competition is made with the aim of determining whether there are entry barriers that obstruct normal competition in the market.

1.4.3 The geographical market

15. When the service market has been defined, the geographical market must be demarcated. This demarcation is generally based on the extent of the electronic communications network and the legislative jurisdiction of the regulatory framework that applies to it. The definition of the geographical market is also based on an assessment of substitutability of the product or service in question, on the supply side and on the demand side, in case of a small but significant non-transitory price increase, as is described above.

16. The geographic market is the area where products or services are offered on sufficiently homogeneous competitive terms. In assessing demand-side substitutability, it is appropriate to consider customers' taste and geographical purchasing patterns. On the basis of this, it is possible to define markets as local, regional, national, or transnational; that is, extending to more than one country. PTA does not have the authority, however, to define transnational markets on its own. If a market is considered to extend to more than one country, European regulatory authorities collaborate on the market definition together with the European Commission and ESA, if appropriate.

17. Two factors are important in defining geographical markets: price and network coverage. If an electronic communications network reaches the entire country, this indicates that the geographical scope should be national. If the distribution of the network is regional and there is no overlapping of regions, this is an indication that the geographical scope should be regional. If prices are the same for the entire country, this indicates that the geographical scope should be national. If prices differ according to region, this is a strong indication that supply- and demand-side substitutability do not exist and that the regions in question are distinct geographical markets.

¹⁴ See also Paragraph 39 in the Guidelines and Explanatory Memorandum accompanying the Commission Recommendation, Section 3.1.

1.4.4 Requirements for the definition of other markets

18. PTA may define markets other than those listed in the ESA Recommendation; for example, due to special circumstances in Iceland. In such instances, it is necessary to consult with ESA. When other markets are to be defined, the criteria listed below must be met in order for it to be possible to impose obligations:

- 1) There are barriers restricting entry into the market.
- 2) The characteristics of the market are such that it will not tend sufficiently towards effective competition.
- 3) The general principles of competition do not suffice to eliminate barriers or promote competition.

In the opinion of the European Commission and ESA, the above criteria exist in the market under scrutiny here.

2.0 Voice call market – summary and history

2.1 General

19. According to Item 10 in the introduction to the ESA Recommendation, market definition must begin with a description of the retail markets and their development over a given period of time taking into account supply-side and demand-side substitutability. One the retail markets have been defined – that is, supply and demand in consumer markets – it is possible to define the relevant wholesale markets; that is, the supply of and demand for products sold to a third party that then sells them to end users. Therefore, in analysing wholesale markets 8-10, PTA will examine the developments and status of related retail markets, which are markets for telephone services offered to consumers.

2.2 Developments in the retail markets for voice call services on fixed networks

20. Telephone services were first offered in Iceland at the beginning of the 20th century. In 1906, a submarine telegraph cable was laid between Iceland and Scotland, and thereafter telephone cables were laid from Seydisfjörður to Reykjavík via Akureyri. The telephone network was built up over the following decades, and by 1960 it reached all parts of the country. The first automatic first telephone exchanges were brought into use in 1932. In 1935, short-wave telephone connections to foreign countries were made available. In 1962, when a telephone cable was laid to Scotland, the quality of international phone connections improved vastly, and in 1980 it became possible for the first time to place a direct overseas call without speaking to an operator. In 1984 the first digital telephone exchanges were brought into use, and this made it possible to offer various types of extra services in addition to conventional voice call services. In 1985 the laying of fibre optic cables began, and in the years that followed, a fibre optic cable network was laid all around perimeter of the country. By 1996 IDSN Internet connections were available, and in 1999 Internet via ADSL became available. The advent of ADSL connections opened the possibility of offering voice call services over the Internet, and in 2006 VoIP became available. VoIP was intended to compete with conventional voice call services, as users of the service could obtain conventional telephone numbers.

21. Landssími Íslands (Iceland Telecom) was founded in 1906 and built up the telephone network from its inception. Iceland Telecom was State-owned and had a monopoly on laying telephone cables and offering voice call services until 1998, when the monopoly was lifted with the Telecommunications Act, no. 143/1996. In 1996 a limited liability company was established for the operation of State postal and telephone services. That company was divided in 1997/1998, and Landssími Íslands hf., Iceland Telecom, was established as a result. In 2005 the Icelandic Government sold all of its share capital in Iceland Telecom to the company Skipti hf., which was owned by several investors. The by far largest shareholder in the company is Exista hf. Following the privatisation of the company, its name was changed to Síminn hf.

22. Initially, competition in voice call services was based on carrier selection, where the user selected a prefix prior to the regular telephone number and thereby gained access to the service provider from whom he wished to purchase the phone call. Early on, new operators concentrated on international calls, as the pricing of international calls offered the best

potential for competition. In the corporate market, competition was also based on direct connections to larger companies. The Telecommunications Act, no. 107/1999, contained provisions requiring that undertakings with significant market power in voice call services on fixed networks to publish a reference offer for interconnection, to practise non-discrimination, and to offer interconnection at cost-oriented prices.

23. In December 1999, number portability was introduced in the fixed-line network. This was an important element in making competition possible because it enabled customers to switch service providers without changing their previous phone numbers. In April 2000, carrier pre-selection was introduced. This meant that telephone calls were always directed to a given service provider without the calling party's having to enter a prefix before the telephone number. Carrier pre-selection facilitated entry into the voice call market by enabling electronic communications undertakings to offer either a full range of voice call services or certain components of those services – for example, international calling – without having to engage in extensive investment, while freeing customers from the inconvenience of having to dial a prefix before entering the phone number.

24. Competition in international telephone calling services began in 1999. By 2001, the number of operators selling international calling services had increased to five, and the number of operators selling domestic voice call services had risen to four. At that point, there were several mergers in the sector, and by 2005 and 2006, only two companies were left in the market: Síminn and Og fjarskipti ehf. Og fjarskipti, which operates under the name Vodafone (hereinafter referred to as Vodafone), was established with the merger of several companies that had been operating in the electronic communications market for a number of years: Íslandssími, Tal, Lína.net, Halló!, and Margmidlun. Vodafone is owned by Teymi hf., a holding company in the electronic communications and information technology sector. Within the group are 10 subsidiaries, including three electronic communications undertakings – Vodafone, Tal and P/F Kall in the Faeroe Islands – and seven information technology companies – Kögun, Skýrr, EJS, Hugur-Ax, Landsteinar-Strengur, Eskill and Kerfislausnir. In 2006 Atlassími and IP-fjarskipti (which then operated under the name Hive) began offering VoIP telephone services. Atlassími was a new company that initially offered international calling with so-called phone cards. Hive had been operating ADSL services for several years. Atlassími, Hive and two other companies merged, and the resulting undertaking was operated under the Hive brand for a short period of time. Hive offered both VoIP voice call services from a fixed location and VoIP nomadic services. In February 2008, Teymi hf. acquired a 51% stake in Hive and merged that company's operations with Ódýra símafélagid (Sko), which was a subsidiary of Teymi and operated solely as a resale agent under the brand Tal.

25. On 5 May 2008, it was announced that the company created by the merger of IP-fjarskipti and Ódýra símafélagid would operate under the name Tal.¹⁵ It was then that information concerning the services and prices of the merged entity was published. Tal offers internet connection, mobile phone services, and telephone services. The company's telephone services fall into three categories: conventional residential telephone services (PSTN), Internet phone, and prepaid telephone cards for international calls. When the company operated under the name Hive, its residential telephone services were based on Internet phone technology. However, Tal has decided to revert to conventional residential telephone services, and it now offers Internet phone only in the form of nomadic services.¹⁶ After Teymi acquired

¹⁵ In official documents, the registered name of the company is IP-fjarskipti.

¹⁶ See news article appearing in *Morgunbladid* on 9 May 2008: "Internet phone exchanged for better service."

the majority stake in IP-fjarskipti, IP-fjarskipti sold Og fjarskipti all of its electronic communications networks and now operates solely as a retail reseller.

26. On 13 June 2008 that the Competition Authority authorised the merger subject to specified conditions.¹⁷ In the estimation of the Competition Authority, the effects of the merger could be felt in the retail market for ADSL and Internet services. It was the Competition Authority's opinion that the electronic communications market in Iceland was characterised by oligopoly – and even duopoly, if the market were examined as a whole. The market is such that two conglomerates, Skipti hf. and Teymi hf., are by far the most predominant, Skipti in particular. Furthermore, Skipti is in the unique position of being the only operator in Iceland that can offer comprehensive electronic communications services, as well as being the owner of the infrastructure that all other electronic communications undertakings must do business with. The Competition Authority concluded that IP-fjarskipti's operations had been very difficult and that the company would likely have discontinued operations had it not merged with another company or taken other special action. It was likely that such a conclusion to IP-fjarskipti's operations would have had a negative effect on competition. Concentration would increase in the market, and it was likely that Skipti's powerful position would be further enhanced. In consideration of all this, it was not considered a viable alternative to invalidate the merger in this case.

27. The Competition Authority's discussions with the merging companies resulted in an agreement whereby the companies agreed to abide by further specified conditions. The purpose of these conditions is to guarantee that full and unlimited competition continues to reign between IP-fjarskipti and Vodafone. In order to safeguard IP-fjarskipti's independence as a business entity, it is required that there be full operational and administrative separation between it and Vodafone. Furthermore, the companies are prohibited from engaging in any sort of collaboration that could curtail competition. Moreover, Teymi and related companies are prohibited from promoting or participating in any collaboration between IP-fjarskipti and Vodafone that could distort competition. The stipulated conditions are intended to guarantee that the companies operate independently of one another on the market and to ensure that the merger does not distort competition.

28. With reference to the available data on IP-fjarskipti and Vodafone's market share, and considering the Competition Authority's assessment of the effects of the merger, PTA is of the opinion that the merger will not make any decisive impact on the markets under scrutiny here. IP-fjarskipti's market share in the relevant markets was very small, about [0-5%],¹⁸ and even when combined with that of Vodafone it does not increase the market share to any significant degree. The two companies' combined market share is far below the threshold for significant market power. In addition, the Competition Authority's requirements set various limitations on operations, which reduces the likelihood that the companies will act in concert in the market. Therefore, the merger has not necessitated changes to the preliminary draft analysis as regards Vodafone's position. However, IP-fjarskipti no longer operates in the wholesale market, and the appropriate changes have been made to the market analysis.

29. At present, two undertakings operate telephone exchanges in Iceland: Síminn, which operates telephone exchanges all over the country; and Vodafone, which operates telephone exchanges in the greater Reykjavík area. In addition, Vodafone operates nine outlying exchanges outside the greater Reykjavík area. Only Míla, Síminn's affiliate, operates a copper

¹⁷ Competition Authority Decision no. 36/2008.

¹⁸ Deviation band included for reasons of confidentiality.

local loop network. Several companies sell international calls using calling cards – the largest being IP net (Heimsfrelsi) – but they do not operate their own networks.

30. From the outset, Síminn hf. (previously known as Landssími Íslands hf.) has been the largest electronic communications undertaking in Iceland. At the Annual General Meeting of Síminn hf., held on 15 March 2007, the company's shareholders approved a restructuring of the Síminn conglomerate. The company's electronic communications network was separated from other operations, and a separate parent company, Skipti hf., was established within the Síminn group. The division of Síminn was an element in the group's reorganisation, wherein the individual operational units - that is, services, electronic communications networks, and real estate - are operated as subsidiaries of Skipti hf., which is a parent company engaged in no operations other than those pertaining to the administration of holdings in other companies and the representation of the Síminn group. The electronic communications operations within the Síminn group are now divided primarily between Síminn hf. and Míla ehf. Míla owns and operates all of the copper local loops in the country that belong to Market 11. These extend to a large majority of homes and business locations in Iceland. Síminn operates telephone exchanges and sells telephone services to residential and corporate customers, and it leases copper local loops from Míla for the purpose. Síminn is Míla's largest customer.

31. In view of the fact that the parent company, Skipti hf., and its subsidiaries, Síminn hf. and Míla ehf., are owned by the party that previously owned Síminn, and due to the fact that there are undeniable administrative and financial connections between the companies, PTA has opted to consider them as a single unit when it assesses market power.¹⁹ PTA takes the view that changes in the operational structure of the group, such as assigning the operation of certain units to subsidiaries of Skipti hf., do not affect Síminn's position in the Icelandic electronic communications market.

32. In July 2005, Síminn began offering VoIP services to corporate clients and the use of IP technology for international calls increased thereafter. In February 2006, PTA issued an announcement concerning Internet phone services. That announcement stated that the Post and Telecom Administration considered Internet phone technology as a possible substitute for conventional voice call services and that no distinction should be made concerning what technology is used in order to provide such voice call services. Thus the provisions of the Electronic Communications Act, no. 81/2003 pertaining to voice call services apply to Internet phone services as appropriate. As regards the use of phone numbers for Internet phone services, the Administration decided that a separate number series would be used for nomadic services, and that number portability between nomadic services and conventional voice call services would be prohibited. Portability of numbers from conventional voice call services to Internet phone services was authorised, provided that the service is registered to a particular location and is not marketed as nomadic service. Following this announcement, Atlssími and IP-fjarskipti (then operating under the name Hive) began offering VoIP service. As is stated above, these companies have now merged, and the merged company only offers VoIP nomadic services at the retail level. Síminn and Vodafone offer VoIP services and use their own systems to do so.

33. The following table shows that competition in international telephone calling services began in 1999. By 2001, the number of operators selling international calling services had increased to five, and the number of operators selling domestic voice call services had risen to

¹⁹ See the PTA analyses of Market 11, dated 21 December 2007; and Market 12, preliminary draft dated 20 August 2007.

four. Several corporate mergers ensued, and by 2005 and 2006, only two companies were left in the market: Síminn and Vodafone. In 2006 Atlassími and IP-fjarskipti began offering VoIP telephone services. As is stated above, Atlassími and IP-fjarskipti have now merged. IP-fjarskipti now offers telephone services and VoIP nomadic services at the retail level. Today there are three operators in the retail market for telephone services, apart from those companies that only offer calling cards for international calls.

Table 2-1 Electronic communications undertakings offering voice call services 1997-2007²⁰

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Domestic telephone services	1	1	1	2	4	4	4	2	2	2	3
International calling	1	2	2	2	5	5	4	3	2	3	3

Currently, eight companies in Iceland have been allocated telephone numbers from the Icelandic numbering system. They are the following:

Table 2-2 Electronic communications undertakings with allocated telephone numbers

Operator	Type of service
Vodafone	Voice call services, VoIP nomadic services, GSM, 3G
IceCell ehf.	GSM
IMC	GSM
IP-fjarskipti	Voice call services, VoIP nomadic services
Nova ehf.	3G
Núll nú ehf.	GSM
Síminn	Voice call services, VoIP nomadic services, GSM, 3G, NMT
Tetra Ísland ehf.	TETRA

34. In December 2006, the population of Iceland was approximately 308,000. According to information from Statistics Iceland, there are roughly 108,000 households in the country. At year-end 2006, user lines in the public telephone network totalled 106,610 for households and 42,485 for corporate and institutional users. These figures illustrate the small size of the Icelandic market, which tends to limit new investments in electronic communications networks. Nonetheless there has been considerable growth in the electronic communications market in recent years. Turnover has increased, and a greater variety of services is available.

2.3 Changes in demand for voice call services on fixed networks

35. Until 1997 there was steady growth in demand for user lines in the fixed telephone network (PSTN). In 1996 ISDN connections were first offered. This gave users the possibility of having two connections active simultaneously; for example, Internet and telephone. The demand for ISDN grew rapidly in the years that followed, and demand for PSTN dropped accordingly. The total number of ISDN connections has remained virtually unchanged since 2000, due to the entry of ADSL Internet connections into the market. According to information from Síminn, use of ISDN has contracted more than figures on installed connections would indicate. The decline has been [...] ²¹ since 2001.

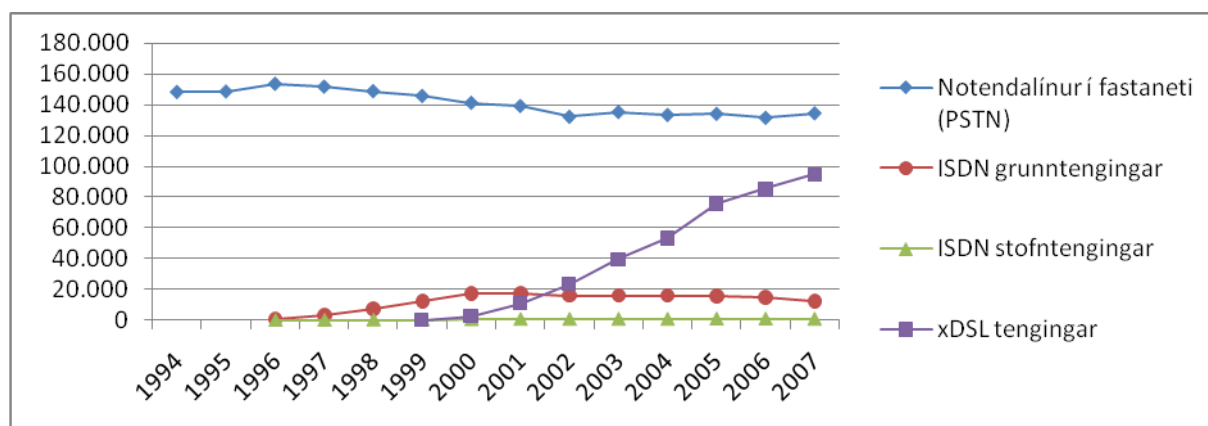
²⁰ Source: Statistics Iceland.

²¹ Figures omitted for confidentiality reasons.

Table 2-3 Installed lines in the public telephone network and high-speed connections 1994-2007

At year-end	Installed lines				High-speed Internet connections (xDSL)
	Total ²²	User lines in fixed network (PSTN)	ISDN Base Rate Interference (2B+D)	ISDN Primary Rate Interference (30B+D)	
1994	148,300	148,300	•	•	•
1995	148,645	148,645	•	•	•
1996	156,807	153,551	698	62	•
1997	165,390	151,700	3,425	228	•
1998	173,673	148,817	7,388	336	•
1999	184,973	145,769	12,192	494	81
2000	196,336	141,330	17,018	699	2,591
2001	196,528	139,300	17,379	749	10,618
2002	192,999	132,353	15,988	789	23,484
2003	192,552	135,402	15,900	845	39,502
2004	190,478	133,504	16,022	831	53,264
2005	193,852	134,258	15,472	955	75,897
2006	188,575	131,693	14,926	943	85,280
2007	186,688	134,622	12,113	928	94,630

Figure 2-1 Number of installed lines



36. In the beginning of 2005, VoIP was offered in the corporate market at the beginning of 2005 and in the residential market a year later. PTA considers it likely that VoIP will increase its market share at the expense of PSTN/ISDN in the next few years.

37. Changes in the volume of telephone traffic in the wholesale markets for origination and call termination correspond with changes in traffic in the retail market for voice call services. A considerable change has taken place in the calling patterns in the fixed-line network. The trends are shown in Table 2.4. which indicates that the number of voice call minutes in the fixed-line network has diminished sharply – from nearly two billion in 2000 to just over five hundred million in 2007. The change stems in part from changed conditions in the telephone market. As Table 2.3 illustrates, the number of high-speed connections via ADSL has grown while the number of ISDN and dial-in connections has dropped. According to Statistics Iceland, the majority of residences in Iceland were Internet-connected in 2007, 89% with ADSL and 7% with ISDN or dial-in connections. Other factors such as Internet

²² Total number of potential voice call channels in PSTN and ISDN.

phone have also made an impact, as it is much less costly to call from such systems. A further influencing factor is communication via e-mail and Internet chat lines. Moreover, voice calls and SMS messaging from mobile phone networks have had an effect.

Table 2-4 Voice calls in the public telephone network (PSTN/ISDN) 1995-2007

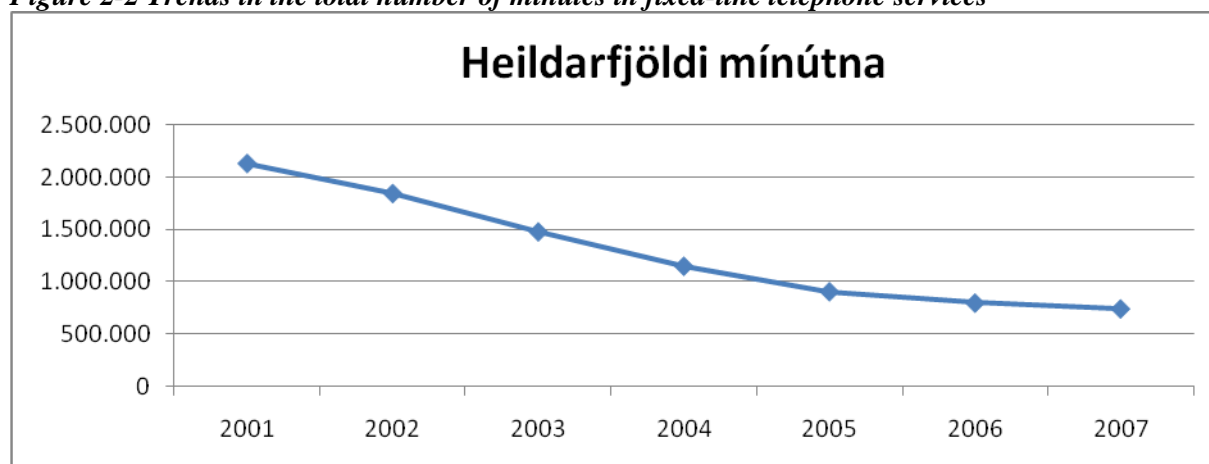
Year	Thousands of minutes			
	Domestic phone calls *	International phone calls		Voice calls to mobile networks
		To abroad	From abroad	
1995	863,976	28,913	28,373	...
1996	866,625	33,003
1997	887,279	37,690	38,000	...
1998	1,391,725	45,247	40,907	...
1999	1,526,422	50,440	52,721	...
2000	1,923,233	59,500	63,720	...
2001	1,850,760	65,251	60,806	149,306
2002	1,588,741	43,785	57,892	150,214
2003	1,210,377	42,540	70,294	152,105
2004	921,787	43,263	47,630	135,180
2005	675,869	50,057	39,712	139,478
2006	574,936	49,378	32,217	140,726
2007	519,543	43,339	35,276	143,449

Sources: Statistics Iceland (information on telephone companies), Póst- og símamálastofnunin (mail volume and telephone traffic) og Post and Telecom Administration (information on telephone companies).

* Figures through 1997 refer to the number of steps (intervals); other figures refer to the number of minutes.

38. After high-speed connections became available, the use of telephones dropped rapidly because users switched from dial-in connections to ADSL. The figures from the past two years show, however, that the contraction has slowed down. PTA considers it likely that the effects of high-speed connections, mobile phones, and Internet phones on telephone network traffic have more or less emerged by now and that the contraction over the next 2-3 years will not exceed the contraction between 2006 and 2007. The graph below shows the trends in telephone network traffic volume for the period 2001-2007.

Figure 2-2 Trends in the total number of minutes in fixed-line telephone services



The graph shows the combined number of minutes, expressed in thousands of minutes; cf. Table 2-4.

39. For the wholesale market for voice call transit, the connection between retail and wholesale traffic is not as clear because factors other than telephone traffic for retail voice calls affects the transit volume. Increased mobile phone use could increase the transit volume

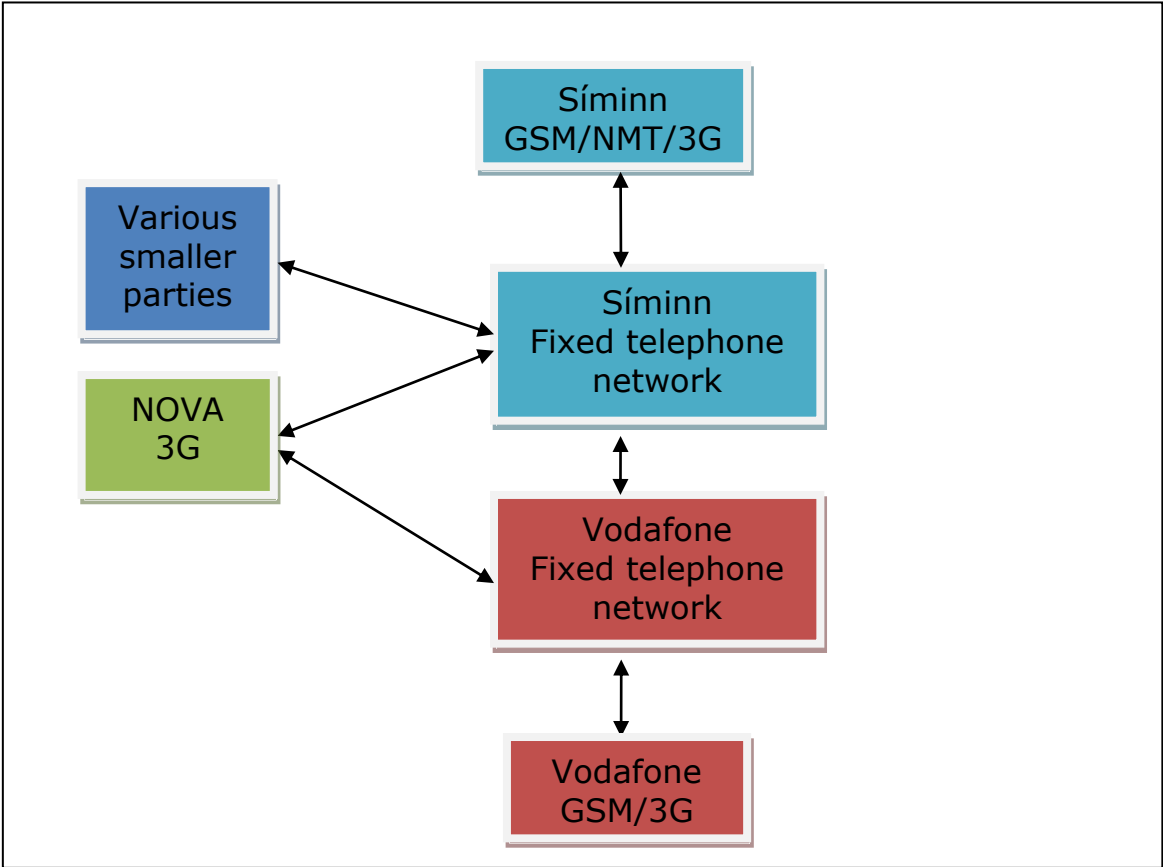
on the fixed voice call network, for example.

2.4 Interconnection of telephone networks in Iceland

40. Telephone calls often go through two or more electronic communications networks. Traffic that is transmitted between networks is called interconnection traffic, and the locations where traffic is transmitted from one network to another are called interconnection points. Interconnection can take place in various ways, depending on which networks end users are connected to.

41. In Iceland there are five companies with agreements for interconnection with public telephone networks. Síminn is the largest telephone company and operates both voice call services via fixed network and mobile phone services. Vodafone, the second-largest operator, also offers fixed-line and mobile phone services. IMC Ísland and Núll-nú operate GSM telephone exchanges and have an interconnection agreement with Síminn, but they concentrate on international roaming rather than offering GSM services to Icelandic users. Five new operators have recently received frequency allocations for the operation of mobile networks. Nova (3G), Amitelo (GSM), Icecell (GSM), Nordisk Mobil Ísland ehf. (CDMA 450), and Öryggisfjarskipti (TETRA). According to the information PTA has compiled recently, Nova has concluded interconnection agreements with Vodafone and Síminn. Icecell has made interconnection agreements with Vodafone but has not yet commenced operations. TETRA was connected to Síminn's by another means than through conventional interconnection but then transferred the connection to Vodafone in 2008. As far as is known, Amitelo and Nordisk Mobile Ísland have not made interconnection agreements.

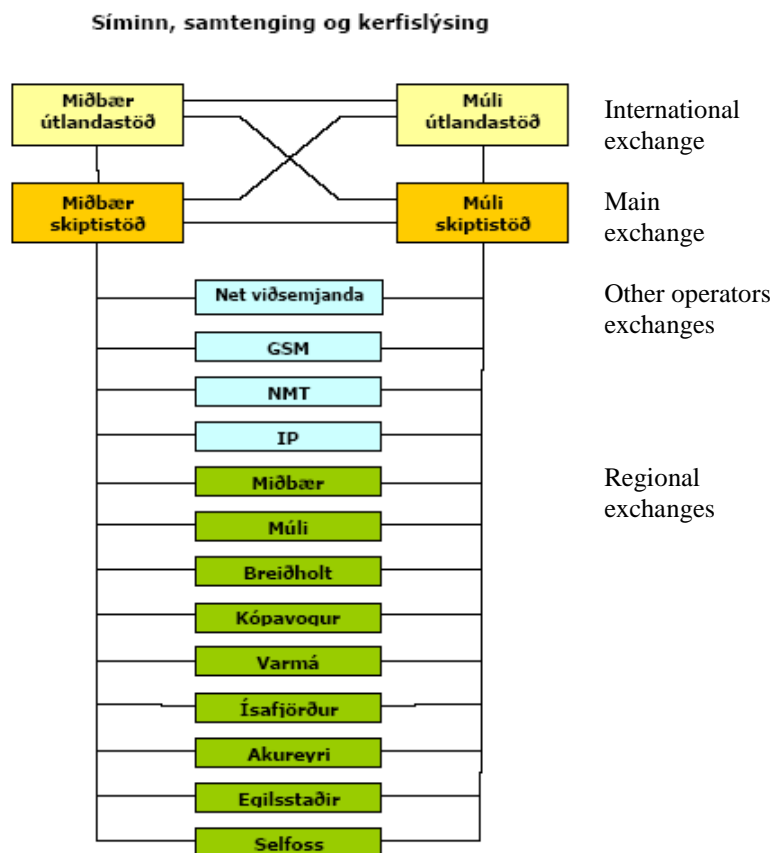
Figure 2-3 Interconnection of telephone networks in Iceland



42. As is shown in Figure 2-3, Síminn and Vodafone's mobile networks are not directly interconnected to other networks apart from the companies' own telephone networks. In PTA's decision on obligations in Market 16,²³ it emerged that the operators are prohibited from setting the condition for interconnection that mobile phone traffic be routed first to their telephone networks. In spite of this decision, the companies have not changed this arrangement, and to PTA's knowledge, no electronic communications undertaking has demanded direct interconnection with the mobile networks. This means that all telephone calls to and from mobile networks are conveyed to networks of other operators.

43. Síminn, the former monopolist and by far the largest operator on the telephone market, operates a conventional PSTN voice call network. In recent decades, Síminn has built up a highly developed electronic communications network from a simple telephone network to a complex network offering a wide variety of services, such as Internet access, VoIP, and television. The voice call network consists of user lines, telephone exchanges, and connections. Customers connect to telephone exchanges via user lines, but the connections connect the telephone exchanges to one another. Síminn owns 230 automatic telephone exchanges. Of these, two are international exchanges (ISC), which handle telephone traffic between Iceland and other countries, and two are switching stations that switch traffic between international exchanges, regional exchanges, mobile phone exchanges, and competitors' telephone exchanges. In addition, a number of the company's largest customers are connected directly to them. There are nine regional exchanges, five in the greater Reykjavík area and four in regional Iceland. Some 220 outlying exchanges are connected to these.

Figure 2-4 Síminn's network



²³ See the Post and Telecom Administration Decision of 20 July 2006.

44. Other operators connect to Síminn's network through the Midbaer and Múli telephone exchanges, both located in Reykjavík. Through these, telephone traffic is routed to and from all regional exchanges (Midbaer, Múli, Breidholt, Kópavogur, Varmá, Ísafjörður, Akureyri, Egilsstaðir and Selfoss). This arrangement makes it unnecessary for other undertakings to connect to each regional exchange; however, it means that undertakings located outside the greater Reykjavík area must lease a connection to Reykjavík in order to connect to Síminn's interconnection points.

45. Vodafone grants other electronic communications undertakings interconnection with the company's network upon request. The interconnection points are at the Midbaer exchange, as well as in the company's telephone exchange at Borgartún. The company owns four telephone exchanges in the greater Reykjavík area and remote subscriber stages for telephone exchanges in certain neighbourhoods. Vodafone now operates outlying exchanges in nine municipalities outside the greater Reykjavík area and intends to increase that number to 14 by year-end 2008. Vodafone does not own a copper local loop network.

46. Because Síminn still has the greatest number of users for voice call services, other network operators are dependent on interconnection with Síminn's network. Most telephone calls in Iceland originate and/or terminate in Síminn's network. For this reason, most service providers choose to connect directly to Síminn's network. Síminn's reference offer for interconnection is therefore a foundation for telephone traffic between networks in Iceland. Because most service providers in Iceland are connected directly to Síminn's network, some of them also use that network to transfer traffic to a third-party network.

47. The transfer of voice calls to, between, or from interconnection points is the principal function of interconnection. Therefore, the number of interconnection areas and the location of interconnection points is very important. There are only two interconnection points in Síminn's telephone network, and both of them are located in Reykjavík.

48. In many locations abroad, it is customary to divide interconnections into three categories – local, regional, or national – depending on whether the interconnection area extends to a specific locality, region, or country. Such a regional division does not exist in Iceland, however; therefore, there is only one price category for interconnection.

49. Síminn's reference offer for interconnection includes offers for call origination, call termination, and transit services. Call origination is purchased by undertakings that use carrier selection or pre-selection in order to provide voice call services to its customers who are connected to Síminn's network. Call termination is purchased by operators that transfer voice calls terminating in Síminn's network. Transit services are purchased by undertakings that need to transfer voice calls to the networks of undertakings with which they do not have direct interconnection.

50. Vodafone's reference offer includes offers for call termination, but it does not include call origination or transit services. The offer states that call transit is not part of the general interconnection agreement and that transit prices must be negotiated separately.

51. IP-Fjaraskipti has not published a reference offer.

2.5 Interconnection fees

52. Ever since the State monopoly on voice call services was lifted on 1 January 1998, Síminn's interconnection fees have been subject to official monitoring, and the company has been required to set cost-oriented prices, cf. Article 13 of the Telecommunications Act, no. 143/1996. Síminn's operating licence, which was issued on 30 July 1998, required that Síminn provide interconnection at cost-oriented prices. Act no. 107/1999 contained provisions concerning interconnection prices based on EU Directive no. 97/33/EC. Article 26 of that Act stated that undertakings that enjoy a significant market share and operate public networks and/or services related to fixed-line telephones and leased lines must maintain transparent prices for interconnection and must base those prices on actual costs plus a suitable return on capital employed. Such undertakings were also to publish reference offers and maintain cost accounting. Further stipulations concerning the execution of accounting were made in the Regulation on Accounting and Financial Separation in Electronic Communications Operations, no. 960/2001. Rules no. 94/2002 were set concerning reference offers for interconnection. In December 2002, Síminn first published a reference offer for interconnection. The obligations pertaining to Síminn's interconnection prices, which were imposed pursuant to Act no. 107/1999, are still in effect, cf. Temporary Provisions II of the Electronic Communications Act, no. 81/2003.

53. Síminn's interconnection prices in its fixed network have been determined hitherto by comparison with prices in other countries. Initially, the comparison was based on a report comparing prices in the Nordic countries.²⁴ In recent years, there have not been significant changes in interconnection fees in Iceland, cf. Table 2.7. No cost analysis of interconnection fees in fixed-line networks has taken place, and when a price increase was requested in 2005 and 2007, a price comparison was carried out, and the increase was rejected because the comparison with prices in comparable countries did not indicate that a price increase was warranted.

Table 2-5 Price of voice call origination and termination in Síminn's fixed-line network²⁵

Type of service	Per-minute charge	Connection fee
Origination and termination of voice calls – day rate	ISK 0.44/min	ISK 0.15/connection
Origination and termination of voice calls – evening, night, and holiday rate	ISK 0.26/min	ISK 0.68/connection

Table 2-6 Price of voice call transit in Síminn's fixed-line network

Type of service	Per-minute charge	Connection fee
Voice call transit – day rate	ISK 0.30/min	ISK 0.15/connection
Voice call transit – evening, night, and holiday rate	ISK 0.15/min	ISK 0.15/connection

54. Table 2.7 shows the termination charges for a three-minute telephone call in Iceland, Denmark, Sweden, Ireland, Norway, Great Britain, and Italy from 1999 to 2007. Since 2000, Síminn's termination charges have remained unchanged, while they have fallen in most of the other countries over the same period of time.

Table 2-7 Developments in interconnection charges

²⁴ Nordic Interconnection Benchmark Study, DDV Telecommunications & Media Consultants, 12 October 1999. <http://www.pfs.is/upload/files/nordic.pdf>

²⁵ The price for termination applies both to traffic ending in conventional telephone numbers and to nomadic service numbers.

	Interconnection service ⁵	1999 ¹	2003 ²	2005 ³	2007 ⁴
Iceland	Local exchanges	Not offered	Not offered	Not offered	Not offered
	Switching stations	1.08	0.83	0.83	0.83
Denmark	Local exchanges	0.84	0.53	0.47	0.38
	Switching stations	1.18	0.77	0.72	0.56
Sweden	Local exchanges	0.88	0.68	0.67	0.67
	Switching stations	1.19	0.90	0.90	0.89
Ireland	Local exchanges	1.04	0.56	0.56	0.56
	Switching stations	1.60	0.88	0.88	0.76
Norway	Local exchanges	Not offered	Not offered	Not offered	Not offered
	Switching stations	Not offered	Not offered	0.69	0.69
United Kingdom	Local exchanges	0.54	0.59	0.37	0.36
	Switching stations	0.82	0.82	0.52	0.53
Italy	Local exchanges	1.00	0.65	0.47	0.42
	Switching stations	1.60	1.05	0.84	0.74

1. Foreign data are based on the Commission Recommendation of 20 March 2000, amending Recommendation 98/511/EC.
2. Based on data from ANALYSYS: <http://www.analysis.com/atlas>
3. Access fees. Based on data from the companies, June 2005, Cullen
4. Access fees. Based on data from the companies, June 2007, Cullen
5. For simplification, the price comparison is based on fees for interconnection at the local level and single tandem level.
6. Prices are calculated in EUR cents per three-minute voice call, using the average exchange rate over the past five years.

55. According to the table, interconnection charges in certain countries have fallen by as much as 53% since 1999. In Iceland they were reduced by 23% at year-end 2000. That price reduction was implemented as a result of the Nordic Interconnection Benchmarking Study, which is dated 12 October 1999.

56. Vodafone charged the same termination prices as Síminn until 2002, at which time Vodafone increased its termination charges by approximately 50%. Tables 2.8 and 2.9 give a comparison of prices charged by the operators that offer voice call termination in fixed networks in Iceland. Higher termination charges can result in higher retail prices for telephone calls into the network in question. Because of number portability, consumers have difficulty determining what network they are calling. Therefore, they are often unable to predict what a telephone call will cost them. At present, however, it is not the practice to charge differing retail prices for calls to the various fixed-line networks.

Table 2-8 Unit prices in Icelandic krónur (per minute/call)

Operator	Day rate	Evening/night/holiday rate	Connection fee
Síminn	0.44	0.26	0.68
Vodafone	0.66	0.44	0.99

Table 2-9 Price difference between Síminn and competitors in % (Síminn base price = 100)

Operator	Day rate	Evening/night/holiday rate	Connection fee
Síminn	100%	100%	100%
Vodafone	150%	169%	146%

3.0 Definition of relevant wholesale markets for voice call services

3.1 Discussion of the relevant markets in the Recommendation

3.1.1 General discussion of the foundation for the definition of wholesale markets 8, 9, and 10

57. The markets under scrutiny here correspond to Markets 8, 9, and 10 in the Recommendation: the wholesale markets for voice call origination on the public telephone network provided at a fixed location (Market 8), voice call termination on individual public telephone networks provided at a fixed location (Market 9), and transit services in fixed public telephone networks (Market 10).

58. The Recommendation distinguishes between wholesale markets and retail markets for voice call services. The retail market for voice call services is discussed in Section 2 of this report.²⁶ Retail service primarily involves the user's gaining access to a telephone network so as to place calls and receive calls from other users. In the Recommendation, voice call services at the retail level have been divided into six markets:

- Access to the public telephone network at a fixed location for residential customers (Market 1).
- Access to the public telephone network at a fixed location for non-residential customers (Market 2).
- Publicly available local and/or national telephone services provided at a fixed location for residential customers (Market 3).
- Publicly available international telephone services provided at a fixed location for residential customers (Market 4).
- Publicly available local and/or national telephone services provided at a fixed location for non-residential customers (Market 5).
- Publicly available international telephone services provided at a fixed location for non-residential customers (Market 6).

59. These six markets are defined with a view to market analysis, according to Article 17 of the Universal Service Directive. The markets listed here as Markets 1 to 6 correspond to the market for "the provision of connection to and use of the public telephone network at fixed locations," which is specified in Annex I, Item 1 of the Framework Directive. This compound market is also mentioned in Article 19 of the Universal Service Directive (in connection with possible provisions concerning carrier selection for individual calls or carrier pre-selection).

60. On the basis of voice call services at the retail level, the Recommendation defines the three wholesale markets listed above: call origination, call termination, and transit services in fixed public telephone networks. The Explanatory Memorandum accompanying the Recommendation states that these three markets together consist of service that entails the conveyance of a phone call from one user to another; however, the internal boundaries may vary depending on the various network arrangements in individual countries.²⁷

²⁶ See also the preliminary draft of the PTA analysis of Markets 1-6, which was published on 7 March 2008: http://www.pfs.is/upload/files/M%201-6_samradsskjal_07.03.08.pdf

²⁷ Explanatory memorandum, Section 4.2.1. Wholesale transit services, pg. 19

3.1.2 Definition of Market 8 (call origination) in the Recommendation

61. The discussion of the wholesale market for call origination in the Explanatory Memorandum is based on the definition of the retail markets for access and telephone calls in a fixed network. It states that wholesale call origination services can be provided in the form of minutes or in the form of capacity.

62. In the Recommendation, both conventional voice calls and calls to Internet service providers (dial-in connections) are considered to belong to this market

63. In the Annex to the Recommendation, the market is defined in the following manner: Call origination on the public telephone network provided at a fixed location. The Recommendation assumes that call origination also includes local call conveyance and is delineated in such a way as to be consistent with the delineated boundaries for the markets for call transit and for call termination on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework Directive, with reference to Directive 97/33/EC (“call origination in the fixed public telephone network”).

3.1.3 Definition of Market 9 (call termination) in the Recommendation

64. The Recommendation bases its definition of the wholesale market for call termination in fixed networks on the fact that this service is a necessary element in retail voice call services. The Explanatory Memorandum points out that, although it is possible to choose between interconnection at various levels of the network in order to terminate a telephone call, it is interconnection at the lowest level that is appropriate when the market for call termination is analysed.

65. According to the Recommendation, the reason there are options for services that can substitute for call termination for retail service providers is that, in most instances, there is only one access connection to the user. In those cases where there is more than one line, the service provider of the calling party does not have the possibility of choosing from among these connections. Therefore, a service provider that handles call termination actually has a monopoly on call termination services provided to its own end users. For this reason, it is concluded that the network of each service provider of call termination in fixed networks is a separate market.

66. The competitive position is utterly different, however, as regards call termination in dial-up Internet connections among Internet service providers (ISPs). Because ISPs can choose the service provider that handles termination and can switch providers at will, the conclusion is drawn in the Recommendation that, in general, competition exists in call termination to ISPs and that there is no reason to intervene in this part of the market. The termination of these telephone calls is therefore excluded from Market 9.

67. In the Annex to the Recommendation, the market is defined in the following manner: Call termination on individual public telephone networks provided at a fixed location. The Recommendation assumes that call termination also includes local call conveyance and is delineated in such a way as to be consistent with the delineated boundaries for the markets for call origination and for call transit on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework

Directive, with reference to Directive 97/33/EC (“call termination in the fixed public telephone network”).

3.1.4 Definition of Market 10 (transit services) in the Recommendation

68. According to the Recommendation, transit services in the public telephone network are the third main part of the wholesale market for voice call services. Transit services include the conveyance of telephone traffic between tandem switches within the same telephone network, between tandem switches on different networks, and from one network via another network to a third. The Recommendation also states that it is possible to use leased lines for the same purpose but that they belong to a separate market. The Recommendation does not mention transit services for telephone calls to ISPs.

69. In the Annex to the Recommendation, the market is defined in the following manner: Transit services in the fixed public telephone network. The Recommendation assumes that transit services are delineated in such a way as to be consistent with the delineated boundaries for the markets for call origination and for call termination on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework Directive, with reference to Directive 97/33/EC (“transit services in the fixed public telephone network”).

3.2 PTA’s definition of the relevant service markets

3.2.1 General

70. In this section, PTA defines the markets for call origination, call termination, and transit services in telephone networks in accordance with the ESA Recommendation. PTA agrees with the definition contained in the Recommendation and the demarcation with respect to retail, data transfer, leased lines, and mobile phone services. However, there are several items that PTA considers it necessary to examine further. In addition, the Administration believes it is necessary to examine the markets from the point of view of conditions in Iceland.

3.2.2 Internal use

71. In the market analysis, PTA assumes that both telephone traffic between networks and traffic entirely within one network fall within the three markets under scrutiny here. The underlying elements of retail telephone services are call origination, call termination, and – in some instances – transit services. Electronic communications undertakings require this service in order to provide retail voice call services to their customers. The use of these service elements creates demand in the wholesale market, whether the transactions involving these services take place within a single undertaking or between undertakings.

72. In this context, it is appropriate to bear in mind that electronic communications undertakings other than Síminn do not offer call origination at the retail level to customers other than their own retail departments. Because of the limited number of telephone exchanges, operators other than Síminn cannot offer call origination all over the country. They are not required to offer carrier selection or pre-selection.

3.2.3 The boundaries between Markets 8, 9, and 10

73. The Recommendation assumes that call origination and termination are based on the lowest level of interconnection; that is, interconnection within the same interconnection area. If a telephone call begins and ends within the same interconnection area, the call consists of origination (Market 8) and termination (Market 9), but not transit Market 10). In Síminn's telephone network, there is only one interconnection area, which extends to the entire country. The same is true of Vodafone's telephone network. Because each network has only one interconnection area, it is not considered call transit if the telephone call is conveyed entirely within the same network. Such a telephone call consists solely of origination and termination. The same applies to telephone calls that are conveyed from an exchange in one network to an exchange in another network and end in that network. In such an instance, the call consists of origination in the former network and termination in the latter. Because neither of the networks is divided into interconnection areas, no transit fee is charged for the call. However, if a call originates in one network, is conveyed through another voice call network, and ends in a third, this involves call transit through the second network. Given the circumstances and interconnection terms in Iceland, transit services on a telephone network exist only when a call is conveyed from one network through a voice call network and from there to a third.

3.2.4 Telephone calls for dial-in Internet access

74. PTA is in agreement with the Recommendation as regards telephone calls to ISPs for dial-in Internet access; that is, that such telephone calls belong to Market 8 for call origination and not to Market 9 for call termination. The Recommendation does not discuss transit services for such telephone calls. PTA considers the competitive conditions for the conveyance of such calls to be the same as those for voice call conveyance. The services is the same, as is the pricing. PTA therefore considers that the conveyance of telephone calls for dial-in Internet access belongs to Market 10 for transit service in public telephone networks. The significance of whether these calls are considered to belong to Markets 8-10 or not is constantly diminishing because of the dwindling use of dial-in connections. xDSL connections dominate the market for data transfer to and from end users, and the number of dial-in connection minutes drops with each year that passes.

3.2.5 Distinction between companies and individuals

75. The Recommendation distinguishes between for companies and individuals (residential and non-residential customers) in its definition of the retail markets for voice call services. On the other hand, there is no difference in origination, termination, and conveyance of conventional telephone calls sold at the wholesale level, no matter whether they are intended for retail sale to companies or to individuals. The service and the pricing of it are the same. Considering this, PTA has come to the conclusion that both residential and non-residential telephone calls belong to the relevant markets.

3.2.6 Various services that are necessary for interconnection

76. According to Síminn's reference offer, various services other than origination, termination, and conveyance of telephone calls are offered in relation to interconnection of

telephone networks.²⁸ These services include, for example, connection into the interconnection area, connection of current from an interconnection point, connection of signal channels, signal traffic, access connection, and various other services related to carrier selection and pre-selection. This service is more or less necessary in order to connect to Síminn's network. The fees charged for this service are only related to usage to a limited degree. They consist mainly of fixed charges; that is, initial fees and/or per-month fees.

77. The Recommendation makes no mention of such services related to the interconnection of telephone networks. Many of these services cannot be related to one wholesale market for voice call services rather than any other. It therefore seems most appropriate to divide the revenues from those services proportionally among Markets 8-10 when determining market share in terms of revenues. However, revenues from these service elements are unlikely to make a noticeable impact on market share; therefore, PTA does not consider it necessary to consider them in measuring market share. Nonetheless, PTA considers that this service is part of the wholesale markets for voice call services, as the service is a prerequisite for interconnection. This means that it is possible to impose obligations relating to these service elements.

3.2.7 Telephone calls to and from other types of networks

78. Telephone calls that originate or terminate in network other than a domestic telephone network could belong in part to Markets 8-10. This could include, for example, international calls or calls to or from a mobile network. If a telephone call originates in a domestic telephone network, it belongs to Market 8. If it terminates in a domestic telephone network, it belongs to Market 9. Telephone calls to or from other networks could also be transmitted along a telephone network, irrespective of whether origination or termination takes place in a telephone network. The portion of the phone call that is conveyed on a domestic telephone network belongs to the relevant wholesale market for voice call services, as the service of the telephone network in this context is not dissimilar to that taking place in telephone calls that take place entirely within networks, and the pricing of the service is the same.

3.2.8 Internet phone (VoIP)

3.2.8.1 General

79. Because the use of Internet phone services (VoIP)²⁹ is on the rise, PTA considers it necessary to examine whether such services belong to Markets 8-10.

80. In Iceland, there were no VoIP (Voice over Internet Protocol) electronic communications services for residential users in Iceland with end-to-end connection possibilities prior to 2004. This service has been available to non-residential customers for several years, but the number of VoIP subscribers has been limited, even among corporations.

²⁸ See Annex 3A to Síminn's reference offer from August 2007:http://www.siminn.is/servlet/file/SamtengingarSimans-Vidauki-3a-Thjonusta.pdf?ITEM_ENT_ID=54113&COLLSPEC_ENT_ID=8

²⁹ "Voice over IP" (VoIP) means that telephone calls are conveyed wholly or in part on an IP network. VoIP is often called Internet phone, IP phone, computer phone, or VoIP phone. In this report, the term Internet phone is used.

81. “Voice over IP” (VoIP) means that telephone calls are transmitted on the Internet in IP form. VoIP is often called Internet phone, IP phone, computer phone, or VoIP phone. In this report, the term Internet phone is used.

82. Internet phone services entail the conveyance of voice calls through the use of Internet protocol. In conventional telephone networks, a voice call is transformed into digital signals that are conveyed along predetermined circuit-switched channels. The phone call is transmitted from A to B in a given form that depends, among other things, on the telephone number, and the point of origination and termination are dependent on a given location or address of the user. With Internet phone, however, speech is transformed into data packets that are transmitted along a network that is packeted, not circuit-switched, and the packets are transformed once again to speech in a computer or special telephone belonging to the called party. Signal transmission that sets up the telephone call in circuit-switched networks determine what route is taken between two users of voice call services. The telephone numbers are the identifiers of each subscriber and are linked to a given location or address. With Internet phone services, the point of origination and termination is not defined as an address but rather as an IP number, or IP address. This arrangement allows the user to place a call virtually anywhere in the world, provided that there is an Internet connection. The transmission capacity of packeted networks is co-utilised with other services along the network, while in a circuit-switched network, the telephone call has sole use of a channel for the duration of the call.

83. PTA considers it appropriate to divide Internet phone services into two main categories:

- Internet phone services that use software and not telephone numbers.
- Internet phones that use telephone numbers

3.2.8.2 Internet phone services that use software and not telephone numbers

84. In general, these calls are so-called peer-to-peer calls, which take place through software in personal computers with the assistance of headphones/speakers and a microphone, enabling the user to speak on the Internet to other users with comparable software and equipment. The service is usually free of charged, but it is not possible to use it to place or receive calls from PSTN/ISDN networks.

85. It is only possible to speak to a limited group of users in this manner; therefore, it is not likely that increases in fixed-line telephone services will induce a large group of users to switch to this sort of Internet phone service. There is reason to assume that Internet phone calls of this type are used as a supplement to conventional fixed-line usage and not as a substitute for it. It is possible that the proportion of substitutability increases with respect to international calls. For example, it is possible to imagine that some users have little need to connect to foreign telephone numbers via fixed-line phone or to be accessible by fixed-line phone. In that case, communicating with a closed group of users (without using telephone numbers) could be an acceptable solution. However, it is unlikely that this use of Internet phone service will induce a large group of customers to cancel their subscriptions to conventional fixed phones. That being the case, it is not possible to view Internet phone services of this type as a feasible substitute for conventional fixed-line phones.

86. A variation on this type of service offers the possibility of calling from a computer to a telephone number for a fee; for example, SkypeOut or Net2Phone. This enhances the usability of the service and provides the option of calling virtually any end user. However, the fact that it is not possible to place a call to an Internet phone user from a conventional telephone limits the substitutability of the service vis-à-vis conventional voice call services. Therefore, in PTA's estimation, this type of service does not belong to Markets 8-10.

3.2.8.3 Internet phones that use telephone numbers

87. Internet phones in this category are generally equipped with an interface to the PSTN/ISDN system and utilise telephone numbers that are consistent with the number structure used in conventional telephone services in order to connect users to one another. Providers of this type of Internet phone services either provide users with broadband connection and an Internet phone or provide only the Internet phone, while the user purchases a broadband connection from another service provider.

88. To a large degree, the functionality of this type of Internet phone is comparable to that of conventional PSTN/ISDN telephone services. Most users who use this type of Internet phone use it instead of a conventional fixed-line phone. This indicates that the service can be viewed as a part of the same relevant market.

89. On 15 December 2005, PTA issued a discussion document with the aim of giving stakeholders the opportunity to express their views concerning the Administration's plans regarding Internet phone services in this category. After having received and considered the stakeholders' comments, the Administration published an announcement concerning Internet phone services on 3 February 2006. That announcement stated that, with consideration given to the Electronic Communications Committee Recommendation no. ECC/REC/(05)03, dated 10 May 2005, and considering the comments submitted by stakeholders, PTA took the view that Internet phone services could substitute for conventional voice call services. In other words, it is PTA's opinion that no distinction should be made based on the technology used to provide voice call services. Therefore, the provisions of the Electronic Communications Act, no. 81/2003, concerning telephone services apply to Internet phones as appropriate, including the provisions on access to emergency services via Emergency Alert-112, calling line identification, wiretapping, and operational security. The announcement opened the possibility for the use of conventional telephone numbers for Internet phone services, including number portability if the service is limited to a particular end user location. However, if the service is not limited to a particular location (nomadic services), a special number series – 49x xxxx – shall be used, and number portability between such services and conventional services is prohibited.

90. Some Internet phone solutions can offer adequate quality, while the quality of others is a problem when there is a large volume of traffic on the broadband access network. Internet phones also pose greater security problems than do conventional fixed-line phone services. Furthermore, the service is new on the market, and this could limit the number of people who are willing to consider switching from a conventional fixed-line phone to an Internet phone.

91. Price formation in the market is variable at present. Some operators offer Internet phone service at fixed monthly rates and provide free telephones. A common element of all

price lists, however, is that the price is much lower than that for conventional PSTN/ISDN service. If users are considering switching from conventional fixed-line phones to Internet phones, price could be a determining factor despite the inconvenience resulting from the difference in quality. Furthermore, service providers have attempted in recent months to improve quality, solve problems related to emergency calls, and enhance security. Thus there is reason to expect that, in the future, these factors will make less of a difference on the market's assessment of the switch to Internet phone services.

3.2.8.4 Supply-side substitutability

92. It is also necessary to assess whether Internet phones offer supply-side substitutability for PSTN/ISDN telephone services. Pre-selection enables operators to offer PSTN/ISDN services without engaging in extensive investments in electronic communications infrastructure. First and foremost, the operators in question must have administrative support systems that are adequate to handle the customers, and they must be able to carry out direct or indirect interconnection with other undertakings. The same applies to operators offering Internet phone services. In general, it is not a great problem, nor is it especially costly for undertakings offering Internet phone services to offer PSTN/ISDN telephone services as well.

93. This means that a small but significant, non-transitory price increase could encourage undertakings offering either Internet phone service or PSTN/ISDN phone service to begin offering both options. PTA takes the view that substitutability exists, on the supply side as well, between Internet phone service and PSTN/ISDN phone service.

3.2.8.5 Is Internet phone service a growing “new market”?

94. PTA has also considered whether Internet phone service should be viewed as a new market. The concept “new market” was introduced in Item 27 of the introduction to the Framework Directive, which states that even though an operator that is a leader in a newly emerging market may be likely to have a substantial market share, that operator should not be subjected in inappropriate obligations.

95. PTA does not see any reason to handle Internet phone service differently than PSTN/ISDN service. In PTA's estimation, the primary difference between Internet phone and PSTN/ISDN lies in the technological arrangements by the electronic communications undertakings, as the two services appear similar enough to the customer that it is possible to consider both as belonging to the same market, cf. Section 2.2.9.2 of this report. Fixed-line phone services with the pertinent supplementary services are a product that has been on the market for a long time. Even though Internet phone service is now available in addition to PSTN/ISDN, this does not mean that it represents a “new” type of telephone service. Thus it is not possible to view Internet phone as the only product form in a growing market that should be distinguished from the fixed-line phone market, but rather as a new technology within the same market.

3.2.8.6 Interconnection of Internet phones

96. Electronic communications undertakings that offer Internet phone services have

concluded interconnection agreements with other undertakings offering all kinds of telephone services. Agreements for interconnection of Internet phone services are not substantially different from agreements for PSTN services. Internet phone calls can comprise origination, transit, and termination, just as other telephone calls do. PTA considers that wholesale Internet phone service should be viewed as a part of the voice call services on a fixed-line network, just as retail Internet phone services are considered to belong to the same service market as do PSTN voice call services.

3.2.8.7 Conclusions regarding Internet phones

97. The conclusion is that PTA assumes that Internet phone/VoIP using telephone numbers is a part of Markets 8-10.

3.3 PTA's conclusion on the definition of the service market for call origination, call termination, and transit services in the public telephone network provided at a fixed location

98. PTA has come to the conclusion that the definition of Markets 8-10 in the Recommendation apply in Iceland. PTA bases the following market analysis on these definitions of Markets 8-10:

99. **Market 8:** Call origination on the public telephone network provided at a fixed location. The Recommendation assumes that call origination also includes local call conveyance and is delineated in such a way as to be consistent with the delineated boundaries for the markets for call transit and fore call termination on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework Directive, with reference to Directive 97/33/EC (“call origination in the fixed public telephone network”).

100. Call origination on the public telephone network provided at a fixed location (Market 8) entails the set-up of the call, routing selection in the telephone exchange, and connection for the origination of the call. Included in this stage is conveyance from the end user, along a local loop to a distribution frame and then to the first telephone exchange on the route, before the next stage of the call, which is either call transit or call termination.

101. **Market 9:** Call termination on individual public telephone networks provided at a fixed location. The Recommendation assumes that call termination also includes local call conveyance and is delineated in such a way as to be consistent with the delineated boundaries for the markets for call origination and for call transit on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework Directive, with reference to Directive 97/33/EC (“call termination in the fixed public telephone network”).

102. Call termination on individual public telephone networks provided at a fixed location (Market 9) entails termination of the telephone call and routing selection at the terminating end of the call. Termination entails call transit from the previous stage in the routing of the call (origination or transit) through a telephone exchange and along the local loop to the called party.

103. **Market 10:** Transit services in the fixed public telephone network. The Recommendation assumes that transit services are delineated in such a way as to be consistent with the delineated boundaries for the markets for call origination and for call termination on the public telephone network provided at a fixed location. This market corresponds to the market listed in Annex I, Item 2 of the Framework Directive, with reference to Directive 97/33/EC (“transit services in the fixed public telephone network”).

104. Transit services in the fixed public telephone network (Market 10) involve the conveyance of telephone traffic through at least one exchange (for example, tandem switch/media gateway) that is not the exchange closest to the end users of the telephone call. In general, this could entail transit within the same network; calls between the network concerned and a competitor’s network; international calls; and calls that are conveyed from one network, through a second, and to a third network, where termination takes place. However, PTA is of the opinion that, given the circumstances in Iceland, transit services on a telephone network exist only when a call is conveyed from one network through a voice call network and from there to a third; cf. the discussion in Section 3.2.3. PTA is of the opinion that, because electronic communications network equipment could play various roles in conveyance of various telephone calls, it is appropriate to define transit services in terms of the transit route rather than the equipment that is used.

105. Telephone calls to ISPs (dial-in connections) are considered a part of the markets for call origination and transit but are not considered to belong to the market for call termination.

106. Telephone calls fall under the three markets, irrespective of whether they are conveyed between networks or are confined to a single network; cf., however, the discussion of Market 10 in Section 2.3.2.

107. PTA considers that there is no reason to distinguish between residential users’ calls and non-residential users’ calls, as is done for the retail market for voice call services. The corresponding wholesale elements underlying residential and non-residential telephone calls therefore belong to the same market.

108. PTA is of the opinion that various service elements that are necessary for network interconnection and are offered at the wholesale level in relation with origination, termination, and transit services belong to Markets 8-10.

109. Telephone calls that originate or terminate in another type of network could belong in part to Markets 8-10 insofar as they are conveyed on a public telephone network in Iceland.

4.0 Analysis of the market for call origination in the fixed-line network (Market 8)

4.1 Demarcation of the geographical market for call origination

110. The geographic market covers the land area where the pertinent operators participate in supply and/or demand for the relevant product or service and where the competitive conditions are sufficiently homogeneous that it is possible to distinguish it from neighbouring areas due to dissimilar competitive conditions. In assessing demand-side substitutability, it is appropriate to consider customers' taste and geographical purchasing patterns. The traditional definition of a geographical market in the field of electronic communications is determined with reference to the coverage of the electronic communications network in question and to the legislative jurisdiction of the regulatory framework applying to the relevant market.³⁰

111. Considering the way telephone network structure and Síminn's reference offer are handled with respect to interconnection, the entire country is treated as one interconnection area and is not divided into smaller areas as is done in many parts of Europe. Síminn's telephone network reaches all settled areas of Iceland. The copper local loops owned by its affiliate, Míla, lie to all residences in the country and are connected to Síminn's telephone exchanges all over the country. It is possible to offer virtually all Icelanders conventional voice call services along this network, and Internet phone services can be offered in most settled areas, as over 95% of Icelanders have the option of high-speed Internet connection. Síminn charges the same price for wholesale call origination all over Iceland. Other operators in the market do not offer call origination at the wholesale level, but they offer the same price for call origination at the retail level all over the country. The same legislative and regulatory framework applies to telephone network operations all over Iceland, and operators' authorisations to operate such networks apply to the entire country. It is not possible to demarcate an area in Iceland where the competitive conditions are vastly dissimilar to those in any other area. Furthermore, PTA is of the opinion that there is no regional difference in users' taste or purchasing patterns. PTA therefore draws the conclusion that the geographical market for wholesale call origination is the entire country.

4.2 Assessment of criteria for significant market power in the market for call origination

4.2.1 Market share

112. The market share of an undertaking is an important criterion in the market analysis. It is not the only criterion that determines whether an undertaking is deemed to have a dominant market position; however, it can give a strong indication of whether the undertaking is dominant or not. A very large market share – that is, over 50% – suffices in and of itself, in accordance with accepted case law, to justify a ruling that an undertaking has a dominant position, except in unusual circumstances. According to the Guidelines, there is usually no suspicion that a single undertaking has a dominant position (single dominance) until its market share has reached at least 40%. This depends, however, on the size of the company in comparison with its competitors. In some instances, an undertaking with a market share under

³⁰ See Section 2.2.2 in the Guidelines.

40% could be considered to dominate the market. In all likelihood, an undertaking with a market share under 25% would not be considered to dominate unless it were a case of joint dominance together with other undertakings.

113. Developments in market share over a given period of time are also meaningful in the assessment of whether an undertaking has a dominant market position. If an undertaking has a constant, large share of the market, this is an indicator of dominant market position; however, a fluctuating or diminishing market share indicates the reverse. A large market share is less of an indicator of market power in a new and expanding market than it is in a mature market that is growing slowly.

114. Call origination in an operator’s own network is a part of the wholesale market for call origination on telephone networks. Because the fees charged for call origination in an operator’s own network are often small and non-transparent, revenues from call origination do not provide a clear view of market share. Market share in retail voice call services is a better criterion in this context.

115. Síminn’s competitors base their services in part on call origination/fixed carrier selection purchased from Síminn, and in part on call origination in their own networks.

116. During the period 2003 to 2007, Síminn’s market share in domestic fixed-line phone services developed as is shown in Tables 4-1 and 4-2. If market share is measured by revenues, Síminn’s market share diminished during this period. The same is true if market share is measured in terms of traffic, as Síminn’s market share in 2007 was [75-80%]³¹ of the number of minutes of fixed-line telephone calls, having declined by [...] ³² in five years’ time. In terms of total revenues from telephone services, Síminn’s market share of telephone services was [75-80%],³³ having declined by [...] ³⁴ in five years’ time.

Table 4-1 Síminn’s market share – revenues from domestic telephone services³⁵

	2003	2004	2005	2006	2007
Telephone calls – fixed-to-fixed	90-95%	90-95%	90-95%	85-90%	75-80%
Telephone calls – fixed-to-mobile	70-75%	70-75%	65-70%	65-70%	70-75%
Total revenues from telephone services	85-90%	80-85%	80-85%	75-80%	75-80%

Table 4-2 Síminn’s market share – traffic in domestic telephone services³⁶

	2003	2004	2005	2006	2007
Telephone calls – fixed-to-fixed	80-85%	85-90%	80-85%	75-80%	75-80%
Telephone calls – fixed-to-mobile	65-70%	75-80%	70-75%	65-70%	65-70%
Total minutes in the fixed-line network	80-85%	85-90%	80-85%	75-80%	75-80%

117. It can be expected that growth in Internet phone services will affect Síminn’s market share in the future. It should be noted, however, that Síminn itself offers Internet phone service, and it is not possible to assert that other operators will achieve a larger share in this

³¹ Deviation band included for reasons of confidentiality.
³² Figures omitted for confidentiality reasons.
³³ Deviation band included for reasons of confidentiality.
³⁴ Figures omitted for confidentiality reasons.
³⁵ Deviation band included for reasons of confidentiality.
³⁶ Deviation band included for reasons of confidentiality.

area. The entry of Internet phones alone need not make a decisive impact on Síminn's market share. PTA considers it likely that Síminn's market share will remain over 50% in the next several years despite the effects of Internet phone services and other technological innovations.

118. As regards market share, there is still a large difference between Síminn and its competitors in this market. PTA is of the opinion that, whether assessed in terms of revenues or traffic, Síminn's large market share indicates unequivocally that Síminn has significant market power in this market.

119. However, market share alone is not a sufficient criterion of whether a service provider has significant market power; it is necessary to examine market share in the context of other pertinent criteria; cf. Article 79 of the Guidelines.

4.2.2 Overall size of an undertaking

120. The size of an undertaking based on, for example, its turnover or some other measure can be important in assessing significant market power. If an undertaking is substantially larger than its chief competitors, this can give that undertaking a competitive advantage. This advantage could involve better production methods, more economical purchasing, greater financial strength, enhanced access to capital, wider distribution, and more effective marketing.

121. An undertaking that has longer expert experience in the market than its competitors could have a similar advantage; for example, an advantage based on expert knowledge in technological matters or on knowledge of the market itself and the legal environment reigning there.

122. In this market, Síminn is the largest electronic communications undertaking, and it has substantial experience of electronic communications. The recent organisational changes in the Síminn group do not change the overall size of the company or its experience in the electronic communications market. As before, the company is by far the largest electronic communications undertaking in the country, with its electronic communications division generating over ISK [...] ³⁷ billion in revenues in 2006, which corresponds to roughly [65-70%] ³⁸ of the total turnover on the electronic communications market. Vodafone has operated in the electronic communications market in its current form since the year 2002. ³⁹ Its predecessors entered the market in 1998 and 2001. On the other hand, Vodafone has a collaboration agreement with the Vodafone Group concerning sales, marketing, and service, as well as the use of the Vodafone Group's brand name. This agreement can be expected to strengthen the company to some extent; for example, as regards marketing and greater diversity of services offered to users abroad. Vodafone recorded revenues of ISK [...] ⁴⁰ billion for 2006, or just over [25-30%] ⁴¹ of the total turnover on the electronic communications market. IP-fjaraskipti commenced operations at the beginning of 2005 and is by far the

³⁷ Figures omitted for confidentiality reasons.

³⁸ Deviation band included for reasons of confidentiality.

³⁹ The Competition Authority's approval of the merger of Íslandssími, Tal, and Halló-frjáls fjaraskipti was not forthcoming, however, until 2003.

⁴⁰ Figures omitted for confidentiality reasons.

⁴¹ Deviation band included for reasons of confidentiality.

smallest of the three companies. It has approximately [0-5%]⁴² of total turnover and has been operation on the electronic communications market for the shortest time. Therefore, it does not make any major impact on Vodafone's strength if IP-fjarskipti's share is added to Vodafone's following Teymi's acquisition of a majority holding in IP-fjarskipti. Each of the other operators has less than [0-5%]⁴³ of total turnover.

123. In addition to this difference in size between Síminn and other operators in the electronic communications market, Síminn derives a greater proportion of its turnover from fixed-line services [25-30%]⁴⁴ than does Vodafone [15-20%],⁴⁵ the second-largest operator. This means that, in the markets under scrutiny here, the difference between the companies is even greater than their overall size indicates.

124. Given these considerations, PTA believes that Síminn's overall size and experience in the electronic communications market strengthens its position in the relevant market. This information indicates that Síminn has significant market power in the relevant market because of its size.

4.2.3 Profitability

125. If a service provider operates a company for a protracted period of time at prices that are considerably higher than the underlying costs and thereby achieves significant profitability (in comparison with other investment options), this could be an indication of significant market power.

126. On the other hand, it is necessary to bear in mind the possibility that it could be possible to trace significant profitability during a given period of time to factors other than market power, such as efficiency, innovation, or write-downs in company accounts, which may not necessarily reflect the actual depreciation of investments.

127. In the same manner, it can be said that limited profitability is not necessarily an effective argument against an operator's having significant market power, as low returns could conceivably be traced to unsatisfactory productivity levels.

128. An examination of Síminn's competitors in this market reveals that none of them publishes itemised figures on their returns from voice call services, either for overall telephone services or for this market in particular. However, PTA assumes, based on available information, that Síminn's competitors cannot demonstrate a level of profitability from call origination comparable to Síminn's because of the economy of scale enjoyed by Síminn.

129. PTA considers that Síminn has an advantage over its competitors because of its size, and that this gives Síminn the potential of achieving greater profitability than its competitors could expect. However, PTA is of the opinion that the information available from Síminn and other undertakings does not give a sufficient view of the profitability from call origination. For this reason, and because information on returns does not always provide a clear indication of market power, as is stated above, PTA cannot say whether current operators' returns give a reliable indication of significant market power in the relevant market.

⁴² Deviation band included for reasons of confidentiality.

⁴³ Deviation band included for reasons of confidentiality.

⁴⁴ Deviation band included for reasons of confidentiality.

⁴⁵ Deviation band included for reasons of confidentiality.

4.2.4 Entry barriers

4.2.4.1 General

130. Entry barriers is a collective term for various factors that affect an undertaking's market power. If barriers to entry are few in a given market, the potential for profitability acts as a magnet for new undertakings wishing to gain market share from existing operators. Potential competition from new parties can affect the behaviour of a dominant undertaking and can diminish the detrimental effects of that undertaking's behaviour on competition. On the other hand, entry barriers weaken or prevent competition.

131. There is a strong link between entry barriers and profitability. The greater the number of entry barriers, the greater the returns that existing operators can expect, which often results from a shortage of competition rather than operational efficiency. It is most desirable for current operators that entry barriers be numerous and exit barriers few. Under such conditions, current operators could prevent new undertakings from gaining a foothold in the market, and unprofitable undertakings would discontinue operations readily.

132. The objective of PTA's market analysis and any measures taken as a result of that analysis is to promote competition in the relevant market. This is done with the aim of stimulating innovation and development and promoting undertakings' ability to compete, for the benefit of consumers. One method of doing this is to reduce entry barriers, which may take various forms. The following discussion focuses on the principal barriers that are considered to obstruct the entry of new operators into the market for call origination. These barriers stem from the strong position enjoyed by the Síminn group and the difficulties experienced by new electronic communications undertakings in creating the infrastructure they need in order to compete in the market. Among the barriers falling under the former category are infrastructure that is not easily duplicated, economy of scale, economy of scope, access to capital, and vertical integration. Barriers falling into the latter category are sunk costs, barriers to growth, and the costs associated with service systems. Entry barriers are largely traceable to the development and status of the electronic communications market, but there is the danger that the Síminn group will exploit the possibility of creating difficulties for competitors and delaying their entry into the market.

4.2.4.2 Control over facilities not easily duplicated

133. When an undertaking has control over infrastructure, or facilities, that it is difficult and expensive to duplicate, this could constitute a considerable barrier for competitors. An example of such infrastructure is the fixed-line telephone network.

134. In order to be able to offer call origination in a fixed-line network, undertakings must control a network or have access to one. Míla ehf., which is part of the Síminn group, owns a copper local loop network that provides voice call services to virtually all users in Iceland. Electronic communications undertaking have the option of leasing access to Míla's local loops and can offer their own telephone and/or Internet services via local loop. The undertakings themselves must set up telephone exchanges for voice call services and DSLAM equipment for Internet connections. New electronic communications undertakings in Iceland have invested in telephone exchanges and DSLAM equipment in areas where the population is large enough to justify it, but in many areas outside the greater Reykjavík area, such

investments have not been considered a feasible alternative. In those instances, carrier pre-selection has been used primarily to offer voice call services.

135. Control over infrastructure that is not easily duplicated is no longer a barrier to entry into the market under scrutiny to the degree that it was just a few years ago. In the very recent past, companies that have offered broadband service (xDSL) via Míla's copper local loop network have begun offering their customers Internet phone services as well. This indicates that, as long as wholesale access to Míla's copper local loop network is controlled as it is currently, the Síminn group's domination of the nation's base network is not necessarily a substantial barrier to entry into this market. The fact that other operators in the market can offer Internet phone services strengthens this opinion even further. However, companies that have invested in telephone exchanges only have infrastructure in the greater Reykjavík area, and they experience greater difficulty entering this market in regional Iceland.

136. Even though it is difficult to acquire and set up infrastructure like the Síminn group's network, technological innovations and the obligation to grant access to the copper local loop network have meant that new operators in the market need not invest in as much equipment as they once did. PTA does not view control over facilities not easily duplicated as a substantial entry barrier in this market.

4.2.4.3 Sunk costs

137. The term sunk costs refers to fixed expenses that are related to irrecoverable investments. For example, when a service provider cannot expect to recoup his investment if he should decide to sell and leave the market. Sunk costs mean that a potential new operator must incur greater expenses because of his decision than do those who are already established in the market. This difference in expenses is actually a barrier to the entry of potential new competitors into the market.

138. In this market, irrecoverable expense items could represent considerable expenditure for new undertakings wishing to gain a foothold with a new base network extending all the way to residential customers' homes. This could hinder the growth of network coverage or, at least, could delay the entry of such undertakings into the market.

139. Míla, Síminn's affiliate, is the only electronic communications services in Iceland that controls a nationwide local loop network, and that network has been built up over a period of decades. Without doubt, it would be extremely costly for a potential competitor to build up a competitive network of a comparable size. Furthermore, that development would primarily be a non-recoverable investment and would constitute the equivalent of an entry barrier, as is described above. However, a new service provider need not build up his own local loop network in order to compete with Síminn or other undertakings because Míla is required to grant other service providers unbundled access to local loops. If the requirement that Míla grant such access is maintained, this reduces the risk that new operators will be faced with such sunk costs.

140. In this context, however, it is necessary to consider that the considerable investment undertaking by Síminn in this market has a long history. Síminn has established considerable goodwill over a period of many years, while potential customers must contribute capital to new investments in competition with Síminn. New undertakings have the option, however, of

selecting newer and less expensive technology than that originally available to Síminn.

141. In most instances, research and development costs represent sunk costs. However, PTA assumes that research and development expenses have not resulted in significant entry barriers in the market under examination because the service concerned is rather standardised and homogeneous.

142. On the whole, PTA is of the opinion that sunk costs do not constitute a substantial entry barrier in the market currently under scrutiny.

4.2.4.4 Economy of scale

143. Economy of scale exists in an undertaking's operations when increased production is accompanied by reduced overall costs per unit of product or service. This is a characteristic of technology companies with relatively high fixed costs and low variable costs. Economy of scale can function as both an entry barrier and an advantage over competitors. Network operators in the market attempt to operate their networks with an eye to optimum utilisation. New network operators need time to build up their operations and to attract customers and traffic; therefore, they cannot expect to benefit from economy of scale in the same manner as current operators with many years' experience.

144. As regards the telephone market, the operation of Síminn's telephone network, which extends to the entire country, entails economy of scale in proportion to the scope and coverage of the network because of the significant underlying investment and fixed costs it represents. The economy emerges in lower initial costs due to the volume of sales. Similarly, there can be economy of scale in operations; for example, through better utilisation of human resources and other resources needed to provide satisfactory services. In some instances, this could be a barrier to entry into the market.

145. In PTA's estimation, Síminn enjoys considerable economy of scale in the market under discussion here because it offers services all over the country and has a very large customer base. It is not assumed that any other service provider in this market has achieved the critical mass necessary to enjoy economy of scale to a comparable degree.

146. PTA takes the view that Síminn enjoys more economy of scale in this market than any of its competitors because of its very diverse service and product offerings and the large number of customers it has in various electronic communications markets. Economy of scale and synergy tend to strengthen Síminn's position in the market. PTA concludes that Síminn, both alone and as part of the Síminn group, enjoys economy of scale that promotes the strengthening of its market position and therefore constitutes an entry barrier.

4.2.4.5 Economy of scope

147. Economy of scope involves its being less expensive to manufacture two or more products together than to manufacture them separately. Lower costs are achieved through joint utilisation of production supplies. A good example of this is the utilisation of an electronic communications network wherein dissimilar services are offered to users. Economy of scope can function both as an entry barrier for new operators and as an advantage over

competitors.

148. It has already been stated that Síminn has a market share of approximately 75% in the market for voice call services. In addition to this service, the Síminn group provides various retail services, which results in a given economy of scope; for example, in readier access to retail customers. The Síminn group also enjoys economy of scope from providing services all over the country; that is, due to its proximity to consumers.

149. PTA is of the opinion that the Síminn group's electronic communications services are characterised by economy of scope that new market participants would not enjoy to the same degree. The possibility for the Síminn group to provide services on a national level could function as a barrier to new operators.

4.2.4.6 Access to capital

150. Access to capital can have a decisive effect on a company's performance in a competitive market. This is particularly the case if substantial initial investments are required. The difference in undertakings' access to capital can function as a barrier to entry. All other things being equal, financially sound undertakings with easy access to capital are in a better position and can better defend themselves against competitors than can undertakings whose access to capital is more limited.

151. It would be an extremely capital-intensive endeavour to build up another base network in competition with Síminn in order to gain access to the public fixed-line telephone network intended for residential users. As has already emerged, it is not necessary to build a new network to enter this market; however, market entry entails substantial expense for marketing, etc.

152. Síminn is the country's largest electronic communications undertaking, and it generates more revenues and returns on its electronic communications services than any other undertaking in the market. In general, it can be concluded that a company of this size, with established operations, will have better access to capital than will a new company wishing to enter the market. PTA is of the opinion that Síminn has excellent access to capital and that this strengthens its position relative to new competitors in this market.

4.2.4.7 Service systems⁴⁶

153. A developed service system can function both as an entry barrier for new operators and as an advantage over competitors. This applies especially to markets where the build-up of a service system is costly, or where established electronic communications undertakings have concluded exclusive agreements with the largest and/or most important service providers in the market.

⁴⁶ Service system is a collective term for the following systems:

- Sales system
- Order entry system
- Line bookkeeping
- Service information
- Invoicing

154. A service system can represent a large investment for new companies seeking to establish themselves in a given market. The presence of established operators that have perhaps written off their expenses can represent an entry barrier for new operators. Companies that have an efficient service system at their disposal can therefore have a competitive advantage over new market participants.

155. An undertaking's investment in a service system is not directly proportional to its number of customers or its total sales; actually, in smaller companies, this investment expense is proportionally higher per customer. Therefore, an investment in an efficient service system represents economy of scale. Síminn, for example, has developed its service system over a period of decades, while new operators must develop such systems from the ground up.

156. The sale of voice call services to consumers takes place primarily through telephone sales, Internet sales, direct mail, direct sales, etc. Therefore, these sales are not dependent on access to sales systems that established operators have developed. Thus it is not possible to say that access to sales and distribution systems alone constitutes an entry barrier in the market under discussion here.

4.2.4.8 Barriers to growth

157. A market with significant potential for growth is much more attractive to new operators than is a stagnant, or mature, market. It is probable that undertakings contemplating entry into a stagnant market must lure customers away from established operators. If there are limits on a market's potential to grow and offer more extensive services, entry barriers may exist.

158. Given that local loops have been laid to every commercial and residential property in Iceland, it can hardly be said that there is significant growth potential in this market. It appears as though demand for fixed-line telephone service has peaked and is rather on the wane, due in part to increased mobile phone use. New operators entering the market must concentrate on luring customers from incumbents, as there is little reason to anticipate any sizeable increase in the number of new users.

159. PTA's conclusion is that this market can be viewed as mature and that this constitutes an entry barrier and tends to enhance Síminn's position in the market.

4.2.4.9 Conclusions concerning entry barriers in the relevant market

160. It is PTA's conclusion that there are considerable entry barriers in Market 8. With the advent of Internet phone technology, it is easier than before to build up the infrastructure necessary to provide access to the telephone network. Nonetheless, in this context there is a sizeable difference between Síminn's position and that of other undertakings, as Síminn has built up telephone exchanges all over Iceland, and the company belongs to the same conglomerate as Míla, which owns and operates all of the copper local loops in the country. Other operators have difficulty in building up infrastructure as extensive as that of the Síminn group. The economies of scale and scope that Síminn enjoys creates a barrier for new undertakings wishing to enter the market. PTA views the telephone market as a mature market

and considers the limited potential for growth to be a barrier to new competitors. On the other hand, the Administration does not consider access to a sales and distribution network a significant barrier to entry.

4.2.5 Potential competition and innovation

161. The general rule is that markets characterised by a high level of innovation are less likely to be influenced by dominant undertakings than markets that are less innovative. Technological innovation could therefore be important as regards potential competition in the market. For this reason, innovation resulting from technological development could weaken an undertaking in comparison with its potential competitors in the market.

162. Even though the market under scrutiny here can be viewed as mature, and although growth in the number of connections/subscriptions is not to be expected in the near future, technological developments could affect Síminn's position in the market.

163. PTA is of the opinion that convergence in both networks and services will characterise the developments in the fixed-line market in the near future. New convergence, particularly the possibility of using broadband to transmit electronic communications and information services of various types means that new service providers' interest in offering telephone services will increase from recent levels.

164. In addition, it can be assumed that there will be an increase in so-called triple-play solutions. These involve offering Internet access, Internet phone, and Video on Demand in one package wherein it is most economical for the customer to elect to purchase all three together. Síminn has been a leader in innovation in the telephone, data transmission, Internet, and television markets. For example, Síminn was first to offer ADSL service, MPLS service, digital television, and television via ADSL. In PTA's estimation, Síminn has a nationwide advantage in triple-play solutions.

165. There are instances where telephone users elect to use only a mobile phone and omit a fixed-line phone entirely. This appears to be particularly the case with young customers. However, there is still quite a price difference between mobile phone services and fixed-line phone services. In view of technological developments, mobile and fixed-line phone services can be expected to become increasingly comparable. It is not a given, however, that this development will weaken Síminn's position in the market because Síminn has a strong position in the mobile phone market as well.

166. PTA is of the opinion that potential competition and innovation in the use of Internet phones will not diminish Síminn's power in this market during the time horizon for this analysis.

4.2.6 Behaviour of market participants

4.2.6.1 Product bundling / diversification

167. If an undertaking offers a very diverse range of products and services, this can promote enhanced goodwill and can make it difficult for competitors to enter the market, unlike the situation if product offerings are more homogeneous. Strong brand names have a comparable effect.

168. Product bundling is another means achieving product diversification. A service provider with a dominant position in a given market could link services or products in that market with services or products in another market so as to offer an integrated package of products/services that will be distinct from the offers of other service providers, who have limited possibilities for engaging in similar behaviour. For this reason, bundling of services/products could promote a dominant position in one market while leading to increased dominance in another market. Competitive dominance of this type can be an important element in the assessment of a dominant market position in the latter market.

169. Síminn has had a nearly unique ability to integrate telephone subscriptions/connections and telephone service to consumers all over Iceland. This bundling of products gives Síminn a tremendous competitive advantage.

170. In the market for telephone services, it is possible to bundle telephone subscriptions and access to other fixed-line and mobile electronic communications services, and this also affects the competitive position. Síminn offers a wider range of services than do most of its competitors; for example, fixed-line phone, Internet access, and IP television via ADSL. Síminn's chief competitor offers a range of services that includes fixed-line phone, mobile phone services, Internet, and broadband.

171. Síminn has a dominant position in these markets as regards fixed-line phone, broadband IP television, and mobile phone services, and it can be expected that Síminn can offer individuals better and more diverse service packages than its competitors and will be able to present and price these services in a new way in the future. A dominant position in retail markets for telephone services lead invariably to increased strength at the wholesale level. This position gives Síminn a competitive advantage in the markets under discussion here and affects the assessment of significant market power.

172. Síminn carries out numerous types of operations, and it has long been divided into departments/divisions. However, it becomes increasingly more difficult to define the organisational boundaries between the various operational divisions within the company. Furthermore, in recent years there have been examples where Síminn has offered prices/discounts⁴⁷ that are designed to take advantage of the fact that the company has a dominant position in the market, in terms of both mobile phone services and fixed-line services.

⁴⁷ Competition Authority: Temporary decision no. 2/2004: Complaint from Og fjarskipti hf.(Vodafone) to the Competition Authority on the subject of Iceland Telecom hf.'s abuse of a dominant market position in its marketing and promotion of the company's special offer entitled "All together with Síminn." The Authority determined that Iceland Telecom hf. had violated Article 11 of the Competition Act, no. 8/1993 by offering and promoting the subscription package "All together with Síminn." With reference to Article 17 of the Competition Act, the subscription offer was deemed invalid.

173. In the final analysis, this should indicate that Síminn's position in the market under scrutiny here is even stronger than is indicated by its market share in telephone services.

4.2.6.2 The impact of market power on related markets

4.2.6.2.1 General

174. Significant market power in one market can foster increased market power in a related market. The impact of such market power can be vertical – that is, at both wholesale and retail levels – and horizontal – that is, in the market for various products at the same level in the value chain.

4.2.6.2.2 Vertical integration

175. If the operations of a service provider reach more than one level in the value chain, that service provider is said to be vertically integrated. It is most common that a vertically integrated undertaking operates both upstream – it supplies its own services or products – and downstream – it provides services to purchasers. A vertically integrated service provider can deploy its upstream strength in order to keep competitors out of the market downstream; for example, through pricing at the upstream level or by not offering its downstream competitors products at the upstream (wholesale) level. In this way, a vertically integrated undertaking that has a strong position in the wholesale market can enhance its position in the downstream (retail) market.

176. The Síminn group's operations in relation to fixed-line telephone traffic are vertically integrated. It can be said that the first wholesale level is local loops and the infrastructure controlled by Míla. This is followed by voice call services at the wholesale level – in this case, call origination – and finally, voice call services at the retail level.

177. The strong position of the Síminn group in the local loop market enhances Síminn's strength in the wholesale markets for voice call services and could actually obstruct most competition if no obligation to grant access to local loops were imposed.

178. It is beyond dispute that strength at the prior sales level can increase the strength of a vertically integrated undertaking at the latter sales level, but market power can make an impact in the opposite direction as well. Síminn's large market share in the retail markets is reflected in its market share in the wholesale markets, and new operators with a small share of the retail markets will experience difficulty in enhancing their strength in the wholesale markets.

179. When the electronic communications market was liberalised, Síminn was subjected to the obligation to grant access to its networks at the upstream sales level at cost-oriented prices. Síminn's competitors have often had reason to complain to PTA about the interconnection prices Síminn has charged them. It is therefore necessary to monitor both access and prices at the upstream level in order to ensure that vertical integration does not strengthen Síminn's position in this market still further.

180. PTA is of the opinion that Síminn's vertical integration tends to enhance its strength in the market under scrutiny.

4.2.6.2.3 Horizontal integration

181. If, in the shelter of ownership, a service provider controls various parallel elements of electronic communications infrastructure that can be used to provide a user with products in a competitive market, this is referred to as horizontal integration. If this is the case, the service provider in question can strengthen his dominance of the market by preventing competition with other electronic communications infrastructure that he controls.

182. Síminn is a leader in most of the base markets for electronic communications, including the markets for broadband and mobile phone service. Síminn controls a number of other networks, and it can be said that this tends to strengthen Síminn's position in the market under discussion. Síminn has a dominant position in many electronic communications markets, and it is also in the forefront of most related retail markets because it is vertically integrated in a number of these markets. Síminn is a leader in the retail markets for fixed-line services, mobile phone services, broadband access, and Internet phone services, and it can offer several different product/service packages that can be customised to meet the needs and budget of each individual market sector. None of Síminn's competitors offers such a diverse selection of products and services. Therefore, its competitors cannot bundle products and prices to the same degree that Síminn can in these retail markets.

183. Síminn's ability to assemble product/service packages for consumers enhances its strength in this market and limits new operators' opportunities to compete.

4.2.7 Demand-side conditions

4.2.7.1 Countervailing buying power

184. Customers with a strong negotiating position can make an impact on competition and restrict providers' potential to operate without concern for their competitors and their customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator's production, is well informed of other offerings, can switch to another operator without significant expense, and even has the potential to commence production of a comparable product/service.

185. PTA's conclusion is that customers' countervailing buying power - that is, the buying power of electronic communications undertakings other than the Síminn group - is limited in the wholesale market, both because of Síminn's large share in the retail market. Actually, Síminn is by far the largest purchaser of its own service for call origination.

186. Other customers that purchase call origination from Síminn have a small market share; therefore, they have a very limited chance to affect the terms of their contractual agreements with Síminn. Furthermore, it is appropriate to point out that Síminn's call origination service is a result of regulatory monitoring and enforcement. PTA considers it likely that, if there had been no obligations imposed on the company, the service would have been discontinued or would have been rendered at abnormally high prices.

187. Therefore, it can be asserted that countervailing buying power in this market is limited and has no effect on Síminn's market power.

4.2.7.2 Customers' switching options, potential switching costs, and the effects of binding contracts

188. If a service provider has a dominant market position, switching limitations or switching costs can enhance that provider's opportunities to behave without concern for the market. Such limitations can be commercial, technical or financial in nature, but they can also be a consequence of the user's trusting established service providers more than new ones and being unwilling to switch providers.

189. It is worth mentioning that users have considerable freedom of choice in the retail market for voice calls, both through carrier selection and through pre-selection. An amendment made to the Electronic Communications Act in 2007 stipulated, in Article 37, Paragraph 2, that the maximum contractual period shall be six months. Furthermore, the provision states that, once the six-month period during which the subscriber is contractually bound has passed, the contract may be cancelled with one month's notice. Should the subscriber decide to switch to another electronic communications undertaking, it must be guaranteed that the transfer of service will proceed smoothly. It is therefore impossible to state that significant switching costs exist in the retail market, even though individuals are subjected to certain contractual obligations and limited freedom of choice.

190. In the relevant wholesale market for call origination, however, customers have limited freedom of choice. Only Síminn offers call origination to other undertakings. Other companies provide this service only to themselves and only in limited geographical areas. Therefore, freedom of choice does not exist in this market. Operators other than Síminn have limited possibilities for greatly enlarging their network coverage areas and must therefore do business with Síminn, as they have no telephone exchange infrastructure. This means that it would be quite costly for an undertaking to switch from Síminn and set up its own services. This cost could decline somewhat, however, with the advent of Internet phone services.

191. PTA is of the opinion that a shortage of freedom of choice and high switching costs in the wholesale market for call origination strengthens Síminn's position considerably.

4.2.7.3 Customers' access to information

192. If customers are to be able to choose from among service providers in the market, they must have access to information that enables them to compare the various offers that are available. Complex price lists and manifold bonus and discount offers can complicate customers' choices and can further strengthen a dominant undertaking's position in the market. This factor has limited significance, however, in this market, where the service is only offered by one operator.

193. In this market, it is not difficult to compile information concerning the charges and the various types of service offered, as this information can be found on the service provider's website. Access to information has no effect on Síminn's market power.

4.3 Assessment of significant market power in the relevant market and designation of SMP operators

194. The assessment of significant market power is based on the ESA Guidelines and various other criteria. PTA complies with the instructions in Paragraph 76 of the Guidelines and considers current market conditions in its analysis of these markets as they are today. The market analysis discusses developments in recent years and considers the likely developments in the months to come.

195. Article 18, Paragraph 1 of the Electronic Communications Act, no. 81/2003, states as follows: *“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.”*

196. This is an important point of departure in the market analysis, and PTA wishes to emphasise that significant market power is the appropriate measure, not abuse of a dominant position. Therefore, the core of the market analysis is not whether an undertaking has misused its dominant market position. 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 important, conduct that enhances a dominant position or maintains the competitive advantage enjoyed by a dominant undertaking can strengthen that undertaking still further.

197. It has been shown that an assessment of market share is not sufficient in and of itself to determine whether an undertaking should be designated as having significant market power in a given market. This is why PTA’s assessment considers other criteria as well.

198. An undertaking can have significant market power alone or together with one or more other undertakings. If it is concluded that an undertaking has significant market power, it is generally unnecessary to consider the question of joint dominance with one or more other operators. However, if it is concluded that no single operator has significant market power, it is necessary to examine the possibility of joint dominance together with other undertakings. If an undertaking has a dominant market position in a given market, it is also possible to decide that it also has a dominant market position in a related market if the relationship between the markets is such that the undertaking can use its strength in one market to enhance its strength in another, cf. Article 18, Paragraph 2 of the Electronic Communications Act.

199. As has been stated previously, only one company offers call origination in fixed networks to other undertakings. Call origination in an undertaking’s own network is also considered a part of the market. Síminn is the largest undertaking, with a market share of [75-80%]⁴⁸ in terms of telephone network traffic. As has emerged previously, if an undertaking has a large market share, this indicates that it has significant market power. According to precedent among cases tried before the European Court, a large market share – that is, over 50% – is an indication of a dominant market position in and of itself unless there are unusual mitigating circumstances.

⁴⁸ Deviation band included for reasons of confidentiality.

200. In the opinion of PTA, the relevant market is characterised by absolute entry barriers, and potential competition is not foreseeable in the next two years. In view of the above analysis, most indicators suggest that Síminn has significant market power in call origination. In order to come to a different conclusion, factors must exist that have a significant effect on an undertaking's power in the market. Such factors are found primarily in countervailing buying power. Based on the market analysis, there are indications that the competitive conditions in the market do not generate pressure on the price for call origination. There is insufficient countervailing buying power at both the wholesale and the retail levels, and nothing indicates that competitors, customers, or consumers could make an impact on Síminn's prices for call origination in the fixed telephone network.

201. Considering the above market analysis, PTA intends to designate Síminn as having significant market power in the market for call origination in fixed-line networks (Market 8).

5.0 Analysis of the market for voice call termination on individual public telephone networks provided at a fixed location (Market 9)

5.1 Definition of the geographical markets for call termination

202. The geographic market covers the land area where the pertinent operators participate in supply and/or demand for the relevant product or service and where the competitive conditions are sufficiently homogeneous that it is possible to distinguish it from neighbouring areas due to dissimilar competitive conditions. In assessing demand-side substitutability, it is appropriate to consider customers' taste and geographical purchasing patterns. The traditional definition of a geographical market in the field of electronic communications is determined with reference to the coverage of the electronic communications network in question and to the legislative jurisdiction of the regulatory framework applying to the relevant market.⁴⁹ In view of the fact that call termination in each individual telephone network is a separate market, it can be deduced that the geographical scope of each market is consistent with the coverage of each operator's network.

203. The markets for call termination in both fixed-line networks and mobile networks (Markets 9 and 16) are distinct from the other defined markets in that the relevant market is defined for each provider of call termination services. Síminn offers the most extensive comprehensive services, both in Market 8 (for call origination) and in Market 9, but in other respects, the market is divided among the same service providers as is Market 8.

204. Considering the way telephone network structure and Síminn's reference offer are handled with respect to interconnection, the entire country is treated as one interconnection area and is not divided into smaller areas as is done in many parts of Europe. Síminn's telephone network reaches all settled areas of Iceland. The copper local loops owned by its affiliate, Míla, lie to all residences in the country and are connected to Síminn's telephone exchanges all over the country. It is possible to offer virtually all Icelanders conventional voice call services along this network, and Internet phone services can be offered in most settled areas, as over 95% of Icelanders have the option of high-speed Internet connection. Síminn offers the same price for voice call services all over the country, both at the retail level and for call termination. The same legislative and regulatory framework applies to telephone network operations all over Iceland, and operators' authorisations to operate such networks apply to the entire country. It is not possible to demarcate an area in Iceland where the competitive conditions are vastly dissimilar to those in any other area. Furthermore, PTA is of the opinion that there is no regional difference in users' taste or purchasing patterns. PTA concludes therefore that the market for call termination in Síminn's telephone network extends to the entire country.

205. Vodafone also offers call termination within its own telephone network, but its service is very limited geographically. As is stated above, Vodafone only has switching stations in the greater Reykjavík area, although it also has outlying exchanges in a few locations in regional Iceland. Vodafone charges a single price for termination in its own network, as the coverage of the networks is not sufficient to require regional division of the network.

206. In view of this, the geographical market is considered to correspond to the

⁴⁹ See Section 2.2.2 in the Guidelines.

geographical coverage of each service provider's telephone network.

5.2 Assessment of criteria for significant market power in the call termination market

5.2.1 General considerations concerning the assessment of criteria for significant market power and competition factors in Market 9

207. The market for call termination on individual public telephone networks provided at a fixed location (Market 9) and the market for call termination on individual mobile networks (Market 16) are unlike the previously defined markets in that the national market as a whole is not the point of departure. An analysis of the voice call termination market is based on the competitive position of the service rendered by each service provider. The service provider that controls call termination access is actually a monopolist in the relevant market. In other respects, PTA refers to the fact that ERG has identified specific competition problems related to voice call termination.

208. PTA takes the view that, as regards Market 9, it is not necessary to assess all of the criteria for significant market power as they are presented in the Guidelines. This is because many of these criteria are considered of limited significance in the market for voice call termination, and even if those criteria were taken into consideration, they would have no effect on the overall results of the analysis.

5.2.2 Market share

209. The market share of an undertaking is an important criterion in the market analysis. It is not the only criterion that determines whether an undertaking is deemed to have a dominant market position; however, it can give a strong indication of whether the undertaking is dominant or not. A very large market share – that is, over 50% – suffices in and of itself, in accordance with accepted case law, to justify a ruling that an undertaking has a dominant position, except in unusual circumstances. According to the Guidelines, there is usually no suspicion that a single undertaking has a dominant position (single dominance) until its market share has reached at least 40%. This depends, however, on the size of the company in comparison with its competitors. In some instances, an undertaking with a market share under 40% could be considered to dominate the market. In all likelihood, an undertaking with a market share under 25% would not be considered to dominate unless it were a case of joint dominance together with other undertakings.

210. In accordance with the definition of the wholesale market for voice call termination on individual telephone networks, each electronic communications network is considered one market, which means that there is only one operator in each market. Therefore, irrespective of what measure is used, each network operator has a 100% market share in the relevant market. In accordance with the foregoing, it is necessary to conclude that undertakings offering call termination in telephone networks are monopolists. The undertakings that fall into this category are Síminn and Vodafone.

211. In PTA's estimation, the nature of call termination in a fixed-line network is such that there appears to be no reason to assume that the number of calls terminating in Síminn's network is vastly different from the number of calls originating in Síminn's network.

According to this, some [75-80%]⁵⁰ of all termination in the fixed-line network most likely takes place in Síminn's network. PTA estimates that Síminn's share of the total number of minutes for domestic call termination in Iceland is around [75-80%]⁵¹ based on the number of telephone calls measured in minutes.

212. Even though each telephone network that is used for voice call termination in the fixed-line network is considered a separate market, the difference between the scope of Síminn's service and that of other service providers makes a certain impact on proportional market power.

213. The previously mentioned 100% market share of all specified service providers indicates strongly that these undertakings have significant market power (SMP) in the wholesale market for call termination in their own telephone networks and can, to a large degree, operate without concern for customers and other electronic communications companies.

214. However, market share alone is not a sufficient measure of whether a service provider has significant market power. The matter must be examined in the context of other criteria that are applicable; cf. Paragraph 79 of the Guidelines.

5.2.3 Profitability and price trends

215. If a service provider operates a company for a protracted period of time at prices that are considerably higher than the underlying costs and thereby achieves significant profitability (in comparison with other investment options), this could be an indication of significant market power.

216. On the other hand, it is necessary to bear in mind that it could be possible to trace significant profitability during a given period of time to factors other than market power, such as efficiency, innovation, or write-downs in company accounts, which may not necessarily reflect the actual depreciation of investments.

217. In the same manner, it can be said that limited profitability is not necessarily an effective argument against an operator's having significant market power, as low returns could conceivably be traced to unsatisfactory productivity levels.

218. Long-term price developments can also provide indications of competitive developments and even the proportion of potential competition. It can therefore provide an indication of whether a service provider has significant market power.

219. Síminn's external termination services are subject to obligations related to pricing, which include the requirement that prices shall be based on costs plus a suitable profit. For this reason, it is not possible in Síminn's case to use profitability as an indicator of market power.

220. PTA has no separate information on the profits of other service providers in Market 9.

⁵⁰ Deviation band included for reasons of confidentiality.

⁵¹ Deviation band included for reasons of confidentiality.

These service providers control rather small networks with limited coverage, and it is assumed that they positioned themselves in the market so as to make a profit (and incur rather low expense). However, these service providers do not have the same economy of scale as Síminn does.

221. Síminn's price for call termination is the same as the comparable price for call origination. In both cases, the price consists of two parts – a connection fee and a per-minute charge – where the per-minute charge is determined by the time the call is placed; that is, during a working day, during the evening, at night, or on the weekend. In March 2008, Síminn's termination charges consisted of a connection fee of ISK 0.68 and a per-minute charge of ISK 0.44 at the day rate and ISK 0.26 at the evening/weekend rate. All of these prices have changed since October 2004.

222. The previous Telecommunications Act contained no authority to monitor pricing other than that of Síminn in with respect to its termination charges for fixed-line telephone calls; therefore, PTA takes the view that these prices provide an indication of market power. During the first years, termination charges for voice calls in fixed-line networks were determined primarily by reciprocity; that is, all service providers charged the same price as Síminn. On the other hand, Vodafone raised its termination charges by approximately 50% in 2002, and when IP-fjarskipti entered the market, it began charging the same price as Vodafone. Vodafone's termination charges are now ISK 0.99 per connection and ISK 0.68/minute at the day rate and ISK 0.44/minute at the night/evening rate.

223. In PTA's estimation, these termination prices charged by Vodafone, which are much higher than Síminn's, indicate that Vodafone actually has pricing freedom and that this suggests the company has significant market power. As is stated above, PTA is of the opinion that the large price difference, which is illustrated in Table 2-9, indicates strongly that, in the market for call termination, Vodafone can operate largely without concern for customers and other electronic communications undertakings. There is no hope of pressure from the company's own customers, as they do not pay for telephone calls placed to them. Instead, the user who calls them from another network pays for the call, and the company with which that user does business pays the termination charge. Síminn charged a higher price for calls to Vodafone's network until 1 August 2006; however, that practice did not induce Vodafone to reduce its call termination charges. Síminn has expressed its dissatisfaction with Vodafone's termination charges but has been unsuccessful in bringing about a reduction. This indicates that Vodafone can determine its termination prices without concern for customers or competitors, as the company charges prices that are 46-69% higher than Síminn's, as well as being much higher than the prices charged by the foreign electronic communications undertakings listed in Table 2-7.

224. PTA therefore concludes, with reference to this, that prices indicate that Vodafone has significant market power in the market for call termination in its own telephone network.

5.2.4 Entry barriers and potential competition

225. In general, potential competition from new service providers affects the behaviour – including prices – of dominant operators in the market. On the other hand, various types of entry barriers can weaken the premises for potential competition or could even prevent competition.

226. Call termination on fixed-line networks is carried out in the network to which the called party is connected. There is no technology in the fixed-line network that enables anyone other than the called party's service provider to offer voice call termination services. This is true both of service provided with conventional interconnection technology and of service based on Internet phone technology.

227. The core of the competition problem in this market can be found in the fact that others cannot offer this service. This is the fundamental reason why each network is viewed as a separate market. Developments allowing others to offer call termination would transform the competitive position in this market. However, PTA sees no indication that such technology will be put on the market in the foreseeable future.

228. The prevailing rule – that the calling party pays – also diminishes the effects of competition in the call termination markets. The reason is that the CPP principle gives users no incentive to switch service providers because new operators offering lower termination charges have entered the market.

229. In PTA's estimation, an assessment of entry barriers has limited significance as long as potential competition remains inconspicuous. Therefore, the Administration considers it unnecessary to evaluate other possible administrative or market-related entry barriers.

5.2.5 Demand-side conditions

5.2.5.1 Countervailing buying power in the relevant market – general

230. Customers with a strong negotiating position can make an impact on competition and restrict providers' potential to operate without concern for their competitors and their customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator's production, is well informed of other offerings, can switch to another operator without significant expense, and even has the potential to commence production of a comparable product/service.

231. Calling parties' service providers constitute the demand side of this market. These include Síminn, service providers that base their operations on pre-selection from Síminn, service providers other than Síminn that offer call origination services, Internet phone service providers, mobile phone companies, and foreign service providers.

232. Three factors indicate that customers' countervailing buying power is very limited in Market 9:

- a. The original service provider has no choice concerning the demand for call termination.
- b. The original service provider has little possibility of refusing the counterparty comparable service when the traffic lies in the opposite direction because the Act on Electronic Communications generally requires that termination service be provided to those requesting it.

c. Because of the CPP principle – that is, the calling party pays – there is little incentive for service providers to offer low termination charges. High termination charges generate increased revenues at virtually the same cost, even if prices are lower. Furthermore, high termination charges can compromise competitors' operational conditions in the retail market.

233. Nonetheless, these factors do not entirely rule out the possible existence of countervailing buying power. This is subject to the customer's ability to charge rather high prices for comparable and/or other services when the roles are reversed. The customer can also attempt to inform users directly that they pay higher prices when the place calls to certain parties.

5.2.5.2 Countervailing buying power vis-à-vis Síminn's termination service

234. Síminn handles the vast majority of call termination in fixed telephone networks. In addition, it provides all external origination services for voice calls, as well as all, or nearly all, transit service. Síminn therefore interacts directly with all service providers in the Icelandic market on the basis of a conventional interconnection agreement. Síminn's interconnection agreement therefore sets certain guidelines for service in the market for call termination, both for this reason and because communications between service providers where Síminn is not involved are negligible.

235. Over half of all of Síminn's service for voice call termination can be traced to Síminn subscribers' voice calls in the fixed network, and a large portion of other voice calls can be traced to Síminn's mobile phone subscribers.

236. Síminn's services are subject to various obligations regarding both non-discrimination and cost-orientation; therefore, there has been little margin for negotiation. The consequence of this is that it has not been revealed how much countervailing buying power individual customers have with respect to Síminn. PTA is of the opinion that the monitoring heretofore is, among other things, a consequence of extremely limited countervailing buying power with respect to Síminn's call termination services.

237. PTA considers that, if Síminn's operations in this market were not monitored, most customers would prove to have little or no countervailing buying power. PTA makes reference, among other things, to the fact that service providers that based their services on Síminn's carrier selection offer very limited voice call termination service, in addition to having limited product offerings and limited market power in other markets.

238. If prices are high and/or terms are generally unfair, or if Síminn threatens this, customers could attempt to influence users by disclosing this information to them. It is assumed that the most effective method would be to encourage the media to cover the issue and/or to communicate the message through advertising campaigns that target the user market. This is hardly effective, however, unless prices have risen extremely high and/or terms are unfair in other respects.

239. This indicates that, under certain circumstances, some customers may have a given amount of countervailing buying power with respect to Síminn's call termination services. On the other hand, the countervailing buying power possessed by other telephone companies is

not enough to reduce Síminn's significant market power in call termination within its own network to any substantial degree.

5.2.5.3 Countervailing buying power vis-à-vis Vodafone's termination service

240. Vodafone's termination services are characterised by the following circumstances, which differ from those faced by Síminn:

- a. Its termination services in the fixed-line system are very limited in comparison with Síminn.
- b. Its counterparty with respect to the bulk of its termination service is large.
- c. Only a fraction of the calls terminated in its network are placed by users on the same network.
- d. The company has not previously been under special supervision in the relevant market.

241. Like Síminn, Vodafone has the incentive to set high termination charges, but unlike Síminn, it has not been subjected to any demands considering the prices it is permitted to charge.

242. From the outset, call termination charges have been an important point for negotiation. Service providers other than Síminn do not have much reciprocal traffic; instead, their traffic is directed through Síminn's network. Contractual negotiations have taken place largely between Síminn and each of the service providers with which it does business. Previously, a principle of reciprocity often applied between Síminn and the other operators. This could indicate that the demand side (primarily Síminn in this context) has a strong enough negotiating position to counteract these companies' monopoly position, both because of its size and its influence on the communication arrangements, including the wording of general terms and conditions.

243. However, in recent years other service providers have charged higher termination prices in the fixed-line network than Síminn does. Vodafone charges ISK 0.66 per minute at the day rate and ISK 0.44 at the evening rate, while Síminn charges ISK 0.44 at the day rate and ISK 0.26 at the evening/night rate. This indicates that Síminn's countervailing buying power is not enough to prevent other service providers from charging high termination prices.

244. The fact that Síminn is bound by official monitoring as regards interconnection of telephone networks reduces the company's countervailing buying power.

245. Early in 2002, Vodafone raised its termination charges to roughly 50% above those charged by Síminn. Síminn previously charged a higher retail prices for calls placed to Vodafone's network than for on-net calls because of Vodafone's higher termination prices. This did not affect Vodafone's termination prices, however, and on 1 August 2006 Síminn lowered its retail prices for calls to Vodafone's network so as to align them with on-net prices. It appears as though Síminn cannot prevent other service providers from charging high prices for termination.

5.3 Assessment of significant market power in the relevant market and designation of SMP operators

246. The assessment of significant market power is based on the ESA Guidelines and various other criteria. PTA complies with the instructions in Paragraph 76 of the Guidelines and considers current market conditions in its analysis of these markets as they are today. The market analysis discusses developments in recent years and considers the likely developments in the months to come.

247. Article 18, Paragraph 1 of the Electronic Communications Act, no. 81/2003, states as follows: *“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.”*

248. This is an important point of departure in the market analysis, and PTA wishes to emphasise that significant market power is the appropriate measure, not abuse of a dominant position. Therefore, the core of the market analysis is not whether an undertaking has misused its dominant market position. 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 important, conduct that enhances a dominant position or maintains the competitive advantage enjoyed by a dominant undertaking can strengthen that undertaking still further.

249. It has been shown that an assessment of market share is not sufficient in and of itself to determine whether an undertaking should be designated as having significant market power in a given market. This is why PTA’s assessment considers other criteria as well.

250. An undertaking can have significant market power alone or together with one or more other undertakings. If it is concluded that an undertaking has significant market power, it is generally unnecessary to consider the question of joint dominance with one or more other operators. However, if it is concluded that no single operator has significant market power, it is necessary to examine the possibility of joint dominance together with other undertakings. If an undertaking has a dominant market position in a given market, it is also possible to decide that it also has a dominant market position in a related market if the relationship between the markets is such that the undertaking can use its strength in one market to enhance its strength in another, cf. Article 18, Paragraph 2 of the Electronic Communications Act.

251. As been discussed, there are two companies in Iceland that offer call termination in their own fixed-line networks, which fall under the description of the relevant market. Síminn is the larger of the two, while Vodafone is much less dominant in this market. In accordance with the definition of the relevant market, both of the companies have a 100% market share in call termination in their own fixed-line networks. As has emerged previously, a constant, large market share indicates that a company has a dominant market position. According to precedent among cases tried before the European Court, a large market share – that is, over 50% – is an indication of a dominant market position in and of itself unless there are unusual mitigating circumstances.

252. In the opinion of PTA, the relevant markets are characterised by absolute entry

barriers, and potential competition is not foreseeable in the next few years. In view of the above analysis, most indicators suggest that Síminn and Vodafone have significant market power in call termination in their own fixed-line networks. 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. Based on the market analysis, there are indications that the competitive conditions in the market do not generate pressure on the price for voice call termination in Síminn and Vodafone's fixed-line networks. At present, technology does not offer the possibility of supply-side substitutability. There is insufficient countervailing buying power at both the wholesale and the retail levels, and nothing indicates that competitors, customers, or consumers could make an impact on Síminn or Vodafone's prices for call termination in their own fixed telephone networks.

253. In light of the above market analysis, PTA intends to designate Síminn and Vodafone as having significant market power in the relevant wholesale markets for call termination in their own fixed-line networks.

6.0 Analysis of the market for transit services in fixed public telephone networks (Market 10).

6.1 Definition of the relevant geographical market for transit service

254. The geographic market covers the land area where the pertinent operators participate in supply and/or demand for the relevant product or service and where the competitive conditions are sufficiently homogeneous that it is possible to distinguish it from neighbouring areas due to dissimilar competitive conditions. In assessing demand-side substitutability, it is appropriate to consider customers' taste and geographical purchasing patterns. The traditional definition of a geographical market in the field of electronic communications is determined with reference to the coverage of the electronic communications network in question and to the legislative jurisdiction of the regulatory framework applying to the relevant market.⁵²

255. The market for transit services (Market 10) is limited to Icelandic land area; therefore, it is necessary to distinguish between domestic and international transit services. Transit between countries is directed through a special switching station in the network (international switching station). Transit from the domestic switching station to the international switching station is considered a part of the transit market (Market 10). Transit services to or from an international switching station to corresponding switching stations in other countries do not belong to the transit market (Market 10).

256. The market under scrutiny here involves transmitting telephone calls between reciprocally connected areas within a service provider's fixed-line network and from one network to a third. In Iceland there is only one interconnection area; therefore, transit only takes place when a telephone call is transmitted from one network to another through a third network.

257. Síminn conveys a large amount of transit traffic between other operators' fixed and mobile networks in Iceland because most service providers in the Icelandic market have a direct interconnection with Síminn, and they are seldom interconnected with one another.

258. Telephone service operators other than Síminn do not offer transit on their telephone networks in their reference offer; however, it is possible to negotiate call transit services separately with Vodafone. Vodafone operates in a limited geographical area and only has interconnection points in Reykjavík; therefore, transit between areas is not available on Vodafone's network.

259. Síminn is by far the largest company that offers this service in Iceland and the only one that includes it in its reference offer; therefore, it is appropriate to define the geographical market in terms of Síminn's operations. Considering the way telephone network structure and Síminn's reference offer are handled with respect to interconnection, the entire country is treated as one interconnection area and is not divided into smaller areas as is done in many parts of Europe. Síminn's telephone network reaches all settled areas of Iceland. The copper local loops owned by its affiliate, Míla, lie to all residences in the country and are connected to Síminn's telephone exchanges all over the country. Síminn charges the same price for voice call transit all over Iceland. The same legislative and regulatory framework applies to

⁵² See Section 2.2.2 in the Guidelines.

telephone network operations all over Iceland, and operators' authorisations to operate such networks apply to the entire country. It is not possible to demarcate an area in Iceland where the competitive conditions are vastly dissimilar to those in any other area. Furthermore, PTA is of the opinion that there is no regional difference in users' taste or purchasing patterns. PTA therefore draws the conclusion that the geographical market for wholesale transit services is the entire country.

6.2 Assessment of criteria for significant market power in the transit market

6.2.1 Market share

260. An assessment of market share is an obvious point of departure for an analysis of significant market power or market dominance, cf. Paragraph 76 of the Guidelines. A service provider's market share should exceed 40% before market share should be viewed as an indication of significant market power. If market share exceeded 50%, it would be exceptional if the undertaking concerned were not considered to have significant market power. The general rule is that service providers with a market share below 25% are not considered to have significant market power.

261. As is stated in Section 3.2, the definition of the market for call transit services generally includes conveyance of calls within the same network, conveyance between that network and a competitor's network, conveyances of international calls along a domestic network, and conveyance of calls from one network, through a second, and on to a third network, where termination takes place. This could include, for example, international calls or calls to or from a mobile network. PTA considers, however, that given the circumstances in Iceland, transit services on a telephone network exist only when a call is conveyed from one network through a voice call network and from there to a third.

262. Various problems attend the assessment of market share in the transit market, just as in the market for call origination. Call transit in an operator's own network is a part of the wholesale market for call transit on telephone networks. Because the fees charged for call transit in an operator's own network are often small and non-transparent, revenues from call transit do not provide a clear view of market share. Furthermore, in this context it is appropriate to mention bundling of transit services with other service elements, etc. Therefore, PTA has come to the conclusion that volume measured in terms of the origin of traffic gives a more accurate view of market share. PTA considers that the above-mentioned problems in assessing market share have little impact on whether Síminn will be designated as having significant market power or not.

263. In view of the foregoing, PTA recommends that traffic volume based on the origin of telephone calls on individual networks be used as a basis for the assessment of market share. Síminn and Vodafone are the only parties that offer transit services in Iceland. Based on the total transit falling under the above definition in this service market, Síminn's market share is [60-65%]⁵³ and Vodafone's [35-40%].⁵⁴ Síminn's smaller market share in the transit market than in the market for call origination on telephone networks (Market 8) is explained largely by mobile phone traffic that is conveyed along a telephone network, as Síminn's market share is lower in the mobile market than in the telephone market.

⁵³ Deviation band included for reasons of confidentiality.

⁵⁴ Deviation band included for reasons of confidentiality.

264. Síminn itself has a need for some of its services in the transit market because all telephone calls to and from Síminn's mobile network are routed through the company's fixed-line network (see Figure 2-3). Although PTA has prohibited Síminn from requiring that all calls on its mobile network be routed through its fixed-line network,⁵⁵ no electronic communications undertaking is interconnected with Síminn's mobile network except Síminn's own fixed-line network. This means that all calls to and from Síminn's GSM network and from and to other service providers are conveyed through Síminn's fixed-line network. Vodafone has also adopted the same practice.

265. Síminn has agreements with approximately [...] companies for call transit and is the only undertaking in Iceland that has revenues from call transit services involving three operators; that is, conveyance from one network, through a second and on to a third. Síminn therefore has a 100% market share in this service. Vodafone only has agreements with two⁵⁷ companies for call transit through its network. In those two instances, the traffic is routed through Vodafone's telephone network and on to its mobile network.

266. Another contributor to Síminn's strong position in the market for transit services is the fact that the number base for number portability in the fixed-line network has been delayed; therefore, other operators have used Síminn to look up fixed numbers due to number portability. This has means that small companies need not maintain a database for number location but have paid Síminn for number look-up and call transit to other networks.

267. Transit services in the form of conveyance to a third service provider can be expected to increase because constantly increased traffic involves a continually increasing number of telephone networks; for example, because traffic to and from mobile networks is on the increase. It is expected that Síminn will maintain its direct reciprocal connections with all service providers and that this could sustain Síminn's large market share. Undertakings that enter the market often do not have the capital to incur the expense that accompanies the establishment of direct interconnection with more than one operator; therefore, they elect to use transit services for calls to and from other networks. It is likely that new undertakings entering the telephone market choose to be connected to Síminn's network, as most users are in that network and it is therefore most likely that most calls will end in termination rather than with transit and then termination. Thus it is likely that, in the near future, Síminn will have more customers that purchase transit service than will other operators on the market.

268. Developments in market share over a given period of time are also meaningful in the assessment of whether an undertaking has a dominant market position. As has been stated previously, in order to assess trends in market share in the transit market, it is useful to assess it based on developments in the volume of traffic. In terms of the combined market share for telephone and mobile phone services, Síminn's share has dwindled in recent years. When the above-described markets are assessed jointly, and with reference to circumstances in the markets for call origination in voice call networks and mobile networks (Markets 8 and 15), Síminn's market share remains very strong, in PTA's opinion, and it is not foreseeable that

⁵⁵ See PTA's decision on the designation of undertakings with significant market power and imposition of obligations in the market for call termination on individual mobile phone networks (market 16), dated 20 July 2006.

⁵⁶ Figures omitted for confidentiality reasons.

⁵⁷ Due to the nature of Vodafone's interconnections, they are transparent in the market and therefore cannot be considered confidential in nature.

this will change to any considerable degree in the next few years.

269. As regards market share, the conclusion is that Síminn's market share indicates that the company has significant market power. When all traffic is considered, Síminn has a market share of [60-65%].⁵⁸ On the other hand, if the traffic generated by the arrangement that Síminn and Vodafone choose to maintain concerning interconnection of their mobile networks, Síminn's market share is overwhelming. Furthermore, Síminn has a far greater number of call transit customers than does Vodafone, and it is likely that this will continue in the near future.

270. Market share alone is not a sufficient criterion of whether a service provider has significant market power; it is necessary to examine market share in the context of other pertinent criteria; cf. Article 79 of the Guidelines. Other criteria are discussed in the following sections.

6.2.2 Profitability and price trends

271. If a service provider operates a company for a protracted period of time at prices that are considerably higher than the underlying costs and thereby achieves significant profitability (in comparison with other investment options), this could be an indication of significant market power.

272. On the other hand, it is necessary to bear in mind the possibility that it could be possible to trace significant profitability during a given period of time to factors other than market power, such as efficiency, innovation, or write-downs in company accounts, which may not necessarily reflect the actual depreciation of investments.

273. In the same manner, it can be said that limited profitability is not necessarily an effective argument against an operator's having significant market power, as low returns could conceivably be traced to unsatisfactory productivity levels.

274. There is not enough sufficiently itemised information, either from Síminn or from Vodafone, to estimate the profitability of call transit services. Therefore, profitability cannot give an indication of undertakings' strength in this market.

275. Long-term price developments can also provide indications of competitive developments and even the proportion of potential competition. It can therefore provide an indication of whether a service provider has significant market power.

276. Síminn's interconnection prices have been subjected to monitoring; therefore, it is not possible to view the company's profit from transit services as an indication of whether Síminn has significant market power or not.

277. Síminn's transit services are priced in various ways, depending on what time of day they are rendered. As of 1 July 2006, Síminn's transit fees were ISK 0.15 per telephone call, ISK 0.30 per minute at the day rate, and ISK 0.15 per minute at the evening/weekend rate.

⁵⁸ Deviation band included for reasons of confidentiality.

Table 6-1 Conveyance of telephone traffic through Síminn's network

Type of service	Day rate	Evening/night/holiday rate	Connection fee
Conveyance	ISK 0.30/min	ISK 0.15/min	ISK 0.15/connection

278. This price list was originally reduced in January 2000, as were Síminn's prices for call origination and termination. The current price, however, has remained unchanged since 2000 except for connection fees, which were added following a 2006⁵⁹ ruling by the Rulings Committee for Electronic Communications and Postal Affairs, after PTA rejected a price increase. Vodafone's price for call transit services is the same as Síminn's.

6.2.3 Entry barriers

6.2.3.1 General

279. Entry barrier is a collective term for various factors that affect an undertaking's market power. If barriers to entry are few in a given market, the potential for profitability acts as a magnet for new undertakings wishing to gain market share from existing operators. Potential competition from new parties can affect the behaviour of a dominant undertaking and can diminish the detrimental effects of that undertaking's behaviour on competition. On the other hand, entry barriers weaken or prevent competition.

6.2.3.2 Entry barriers related to conveyance from another network to a third network

280. Services for conveyance between another network and a third network require interconnection with the service providers controlling the networks concerned.

281. Síminn is required to provide reciprocal interconnection services because the company controls a nationwide telephone network and has a considerable market share in the retail markets for both fixed-line and mobile phone services. For this reason, most of the main service providers in these retail markets have a direct interconnection with Síminn, which uses this fixed reciprocal connection in its transit services.

282. Other service providers that might wish to operate such transit services must establish a comparable reciprocal connection with various service providers other than Síminn. Such reciprocal connections are subject to certain fixed costs. If it is to be profitable for these service providers to establish direct interconnections with one another, the traffic must be enough to defray these costs.

283. To the best of PTA's knowledge, the traffic between most service providers other than Síminn is limited enough that it is not feasible to establish a direct interconnection, but it is appropriate to mention that, according to Article 24 of the Electronic Communications Act, electronic communications undertakings that operate public electronic communications networks or public electronic communications services have the right and the obligation to negotiate for the interconnection of networks and services.

⁵⁹ See the ruling in Case no. 5/2006.

284. Increased use of Internet phones could increase direct reciprocal communications between the various service providers, especially if direct reciprocal IP-to-IP connections are established. This could give various service providers the possibility of offering transit services from a second service provider to a third. On the other hand, this development could mean that demand for transit services for reciprocal traffic between two IP service providers would more or less vanish. PTA cannot see that Internet phones will have a substantial effect on entry barriers in other parts of the market for call transit.

6.2.4 Potential competition and innovation

285. Generally speaking, there are fewer opportunities to wield market power in markets characterised by vigorous innovation than in markets where innovation is limited. For this reason, technological developments can make an impact on potential competition in a market. Innovation that can be traced to technological development can thereby contribute to a service provider's weakened position with respect to potential competitors.

286. That being the case, technological developments that reduce interconnection costs could enhance potential operators' chances to provide external transit services and to shape transit services for their own use.

287. In PTA's estimation, Vodafone is the only operator that could give Síminn any real competition, but Vodafone has to some extent needed Síminn for conveyance of internal traffic, both between two fixed-line phones and between fixed and mobile phones.

288. Increased Internet phone services, which offer the possibility of direct reciprocal IP-to-IP interconnection, could also provide the option of direct interconnection between such service providers. However, it is not expected that the number of Internet phone users will be high enough to make a significant impact in this respect in the next two years.

289. PTA is of the opinion that potential competition and innovation will not reduce Síminn's market power in this market in the immediate future.

6.2.5 Behaviour of market participants

6.2.5.1 Product bundling / diversification

290. A high degree of product differentiation or dissimilar products can create customer loyalty and make it more difficult for competitors to enter the market than when products are more homogeneous. Strong brand names have a comparable effect.

291. Product bundling is a type of differentiation. A service provider with a strong market position in the market under scrutiny could link (bundle) service elements or products in that market with services or products in another market with the aim of offering a product/service package that is distinct from competitors' offerings and that competitors have difficulty duplicating. In this way, the bundling of services/products can foster market power in one market and generate a competitive advantage in another market. Such a competitive advantage can affect the assessment of significant market power in the latter market.

292. Because Síminn and Vodafone's telephone networks are not divided into different

interconnection areas, transit is not bundled with call origination or termination. Therefore, bundling has little significance in this market.

293. That being the case, it is not possible to view bundled sales or product diversification as having any tangible effect on Síminn and Vodafone's market power.

6.2.5.2 The impact of significant market power on related markets

294. Significant market power in one market can enhance a service provider's market power in a related market. When market power is wielded in this way, the effect can be vertical – that is, between a wholesale market and a retail market – or horizontal – that is, between product types at the same level in the value chain.

6.2.5.2.1 Vertical integration

295. If the operations of a service provider reach more than one level in the value chain, that service provider is said to be vertically integrated. It is most common that a vertically integrated undertaking operates both upstream – it supplies its own services or products – and downstream – it provides services to purchasers. A vertically integrated service provider can deploy its upstream strength in order to keep competitors out of the market downstream; for example, through pricing at the upstream level or by not offering its downstream competitors products at the upstream (wholesale) level. In this way, a vertically integrated undertaking that has a strong position in the wholesale market can enhance its position in the downstream (retail) market.

296. Síminn is a vertically integrated service provider, and its associate, Mila, owns the transit network that has been laid all over the country, as well as owning the access network. Together, these form the foundation for the company's wholesale services. A vertically integrated service provider like Síminn has a strong enough position in the wholesale market that it can use that strength to deny competitors access to the retail market.

297. A strong position on the retail market can also mean that other potential service providers in the transit market have difficulty amassing a sufficient number of customers to bear the investment in extensive transit networks for voice call services. The fact that Síminn has a significant amount of traffic in its own telephone network means that fixed costs for interconnection are relatively unimportant, and this strengthens the company's position. The large number of users on Síminn's network also means that small companies that can only establish a direct connection with one company tend to choose Síminn rather than other operator. This means that they must purchase transit services from Síminn to other networks, and in this way Síminn's strength in the retail market reinforces its position in the transit market.

298. The use of Internet phones could compromise both Síminn's market share in the retail market for traffic and the benefits it derives from vertical integration. This could diminish the company's market power. However, a number of factors are still uncertain with respect to these developments. In the estimation of PTA, Síminn has significant market power in the

broadband market;⁶⁰ therefore, it can be assumed that Síminn will guarantee itself a substantial portion of the Internet phone market.

299. Vodafone's operations are vertically integrated in that the company operates at both wholesale and retail levels for telephone services. Vodafone's market share in the retail market for telephone services is small compared to Síminn's and is not conducive to strengthening the company's position in the wholesale market for call transit.

300. Síminn's strong position in the retail market for fixed-line services therefore helps to maintain the company's position in the transit market.

6.2.5.2.2 Horizontal integration

301. If, in the shelter of ownership, a service provider controls various parallel elements of electronic communications infrastructure that can be used to provide a user with products in a competitive market, this is referred to as horizontal integration. If this is the case, the service provider in question can strengthen his dominance of the market by preventing competition with other electronic communications infrastructure that he controls.

302. Síminn has a strong position in many markets for electronic communications services, at both wholesale and retail levels. The connections with the wholesale market for leased lines and mobile phone services are the factors that are considered to have a decisive impact on Síminn's market power in the transit services market.

303. As regards traffic between reciprocal interconnection points in the telephone system of the service provider itself, service providers other than Síminn are often dependent on using the Síminn group's leased lines. The Síminn group has a strong position in the leased line market, and it is possible to abuse that position by not providing service that is routed on transmission lines and/or offering the service at unfair terms. Síminn has not had the opportunity to do this because its activities are subject to official supervision. However, PTA is of the opinion that, if there were no official measures taken, the Síminn group would have the opportunity to use its strong position in the leased line market to maintain a dominant market position in the transit services market.

304. Furthermore, Síminn has a large market share in the wholesale and retail mobile phone markets, which means that a large part of the traffic that is conveyed between Síminn's fixed-line network and other telephone networks takes place on Síminn's network. The company has had significant market power in mobile phone services, and this supports its strong position in the transit market. If no direct, reciprocal interconnection agreements are concluded between the company's mobile phone services and those of other service providers, Síminn could increase its market share in the transit services market still further.

305. Vodafone does not have strength comparable to Síminn's in vertically linked markets. Heretofore, Vodafone has only been designated as having significant market power in the market for call termination in its own mobile network. Vodafone has a considerable number of mobile phone customers, and this could strengthen the company's position in call transit,

⁶⁰ See the Post and Telecom Administration Decision of 18 April 2008 of the wholesale market for broadband access (market 12).

but only as regards transit into its own network. On the whole, Vodafone's users of telephone and mobile phone services are far fewer than Síminn's; therefore, it is likely that the first option for small companies will be to interconnect with Síminn and purchase transit services from Síminn rather than from Vodafone.

306. PTA is of the opinion that Síminn has the potential to use its position in the leased line and mobile phone markets to bolster its position in the transit market; however, it is possible to reduce that effect with supervisory actions in the relevant markets.

6.2.6 Demand-side conditions

6.2.6.1 Countervailing buying power

307. Customers with a strong negotiating position can make an impact on competition and restrict providers' potential to operate without concern for their competitors and their customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator's production, is well informed of other offerings, can switch to another operator without significant expense, and even has the potential to commence production of a comparable product/service.

308. Even though Síminn is not considered to use transit services for on-net traffic on its telephone network, the company uses a considerable portion of transit traffic itself for its mobile phone services. Other operators have a small market share of telephone traffic and therefore are not large enough customers to have countervailing buying power. Vodafone's traffic is considerable, however, if its share in the mobile phone market and the fixed-line market are combined. Nonetheless, there are no signs that the scope of Vodafone's business with Síminn gives the company a chance to wield countervailing buying power.

309. Therefore, it can be asserted that countervailing buying power in this market is limited and has no effect on market power.

6.2.6.2 Customers' switching options, potential switching costs, and the effects of binding contracts

310. If a service provider has a dominant market position, switching limitations or switching costs can enhance that provider's opportunities to behave without concern for the market. Such limitations can be commercial, technical or financial in nature, but they can also be a consequence of the user's trusting established service providers more than new ones and being unwilling to switch providers.

311. Customers have limited freedom of choice in the relevant wholesale market for call transit. Only Síminn and Vodafone offer call transit for other operators. Operators other than Síminn have limited possibilities for greatly enlarging their network coverage areas and must therefore do business with Síminn, as they have no telephone exchange infrastructure. This means that it would be quite costly for an undertaking to switch from Síminn and set up its own services. The fact that most users are on Síminn's network is likely to increase the company's market share in this market. A new operator that enters the telephone market and chooses to negotiate with only one company for interconnection in order to reduce its fixed

costs will generally choose to connect to the network with the greatest number of users. This means that the company can terminate the majority of its telephone calls by paying only for termination rather than for transit and termination when the call must be conveyed on to a third operator's network. Such an operator actually has no other economical solution.

312. PTA is of the opinion that a lack of freedom of choice and high switching costs in the wholesale market for call transit strengthens Síminn's position considerably.

6.3 Designation of undertakings with significant market power in the market for transit services in fixed public telephone networks

6.3.1 General

313. The assessment of significant market power is based on the ESA Guidelines and various other criteria. PTA complies with the instructions in Paragraph 76 of the Guidelines and considers current market conditions in its analysis of the relevant market. The market analysis discusses developments in recent years and considers the likely developments in the months to come.

314. Article 18, Paragraph 1 of the Electronic Communications Act, no. 81/2003, states as follows: *"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."*

315. This is an important point of departure in the market analysis, and PTA wishes to emphasise that significant market power is the appropriate measure, not abuse of a dominant position. Therefore, the core of the market analysis is not whether an undertaking has misused its dominant market position. 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 important, conduct that enhances a dominant position or maintains the competitive advantage enjoyed by a dominant undertaking can strengthen that undertaking still further.

316. It has been shown that an assessment of market share is not sufficient in and of itself to determine whether an undertaking should be designated as having significant market power in a given market. This is why PTA's assessment considers other criteria as well.

317. An undertaking can have significant market power alone or together with one or more other undertakings. If it is concluded that an undertaking has significant market power, it is generally unnecessary to consider the question of joint dominance with one or more other operators. However, if it is concluded that no single operator has significant market power, it is necessary to examine the possibility of joint dominance together with other undertakings. If an undertaking has a dominant market position in a given market, it is also possible to decide that it also has a dominant market position in a related market if the relationship between the markets is such that the undertaking can use its strength in one market to enhance its strength in another, cf. Article 18, Paragraph 2 of the Electronic Communications Act.

6.3.2 Concerning Síminn's position in the relevant market

318. As yet, Síminn is the largest undertaking that offers transit services in fixed-line networks, and its total market share in this market is in the range of [60-65%].⁶¹ However, if revenues from transit from another party's network to the network of a third party are considered and the transit and the traffic generated from Síminn and Vodafone's directing all traffic to and from their mobile networks through their fixed-line networks, Síminn's market share is 100%. As has emerged previously, a constant, large market share indicates that a company has a dominant market position. According to precedent among cases tried before the European Court, a large market share – that is, over 50% – is an indication of a dominant market position in and of itself unless there are unusual mitigating circumstances.

319. Síminn enjoys strength in related markets, both horizontally and vertically. This greatly strengthens its position on the transit market. In this context, it is very significant that most users are on Síminn's network; therefore, it is desirable for new telephone companies to establish direct interconnection with Síminn and purchase transit services from Síminn to other networks with fewer users.

320. In the opinion of PTA, the relevant market is characterised by entry barriers, and potential competition is not foreseeable in the next two years. In view of the above analysis, most indicators suggest that Síminn has significant market power in call transit. In order to come to a different conclusion, factors must exist that have a significant effect on the company's market power. Such factors are found primarily in countervailing buying power. Based on the market analysis, there are indications that the competitive conditions in the market do not generate pressure on the price for call transit. There is insufficient countervailing buying power at both the wholesale and the retail levels, and nothing indicates that competitors, customers, or consumers could make an impact on Síminn's prices or other terms for call transit in the fixed telephone network.

321. Considering the foregoing discussion, Síminn's large market share, coupled with other factors, indicates that the company has significant market power in the relevant market. On the other hand, in a duopolistic market like that in Iceland, the rule concerning 50% market share is not as strong an indication of market power as it would be if there were a greater number of independent undertakings operating in the market. When such market conditions reign, there can be more danger of collusion in the market, which could occur either through tacit agreements or joint decisions made by established operators. Therefore, PTA considers it appropriate to examine whether conditions exist that indicate that Síminn and Og Vodafone exercise joint dominance of the relevant market. Those conditions are governed chiefly by market condition and by the behaviour of operators in the market.

6.3.3 Assessment of joint market dominance⁶²

6.3.3.1 Assessment criteria

322. Article 18, Paragraph 1 of the Electronic Communications Act assumes that undertakings can be assumed to have significant market power together with one or more

⁶¹ Deviation band included for reasons of confidentiality.

⁶² See Section 3.1.2, Collective dominance, in the ESA Guidelines.

other undertakings, in what is variously called joint dominance or collective dominance. Joint dominance means that two or more undertakings that are legally and financially independent of one another can dominate together if the relationship between them is such that they actually behave as if they were a single operator in the market. That relationship need not be formal or structural; it is sufficient that market conditions be conducive to informal co-ordination of methods by different operators, which results in ineffective competition.⁶³

323. The interpretation of the concept of joint dominance is based on legal precedents from the European Court concerning Article 82 of the Treaty of Rome, which is comparable to Article 54 of the EEA Agreement. PTA is also authorised to consider the decisions of the European Commission on the basis of regulatory provisions regarding mergers. The European Court has, in several merger cases, issued guidelines concerning how the term collective dominance should be interpreted and what conditions must exist.⁶⁴ In the so-called Airtours case,⁶⁵ the European Court set forth three conditions that must all be met in order for two or more undertakings to be considered to have joint dominance in an oligopolistic market.

1. The undertakings must be in a position to have a tacit agreement (tacit co-ordination). In this context, the market conditions must be sufficiently transparent, so that the undertakings can, with acceptable accuracy and speed, follow one another and determine whether the other party is violating the agreement. The most important preconditions for deciding that this condition is met are market concentration, transparent market conditions, a mature market, diminishing demand, and homogeneous products.
2. There must be long-term encouragement for the undertakings to abide by the agreement, which means that there is some sort of system of sanctions or retaliatory mechanisms among the undertakings that would make it unprofitable for any of them to violate or deviate from the agreement. The undertakings must be conscious of the fact that deviations from the agreement will mean that the same type of measures will be taken by other undertakings and are not profitable for the long term.
3. Existing and potential competitors and customers may not be in a position to compromise the results of the agreement. Most important in this context is the question of whether there exist potential competitors and consumers who could counter the joint dominance. Significant barriers preventing entry into the market are meaningful in this sort of assessment.

324. In EU case law, there are strict requirements relating to proof of co-ordinated action. In the above-mentioned case, it was confirmed that a heavy burden of proof rested on the Commission with regard to prohibiting mergers due to the risk of collective dominance.

325. Paragraph 99 in the ESA Guidelines states that if there are no formal connections between the undertakings in question, it is necessary to examine whether certain criteria exist in the market which encourage joint dominance. These criteria include, among others:⁶⁶ significant market concentration, transparency, a mature market, diminishing demand,

⁶³ Case no. C 395-396/96: Compagnie Maritime Belge Transports SA and Case no. T-/: Gencor Ltd v. Commission.

⁶⁴ The Merger Control Regulation No 4064/89, dated 21. December 1989; see Paragraph 103 in the ESA Guidelines.

⁶⁵ Case no. T-342/99 Airtours v. Commission, dated 6 June 2002.

⁶⁶ See a list of the criteria for collective dominance in Paragraph 98 of the ESA Guidelines. The list is not exhaustive, and lack of fulfilment of some of the criteria does not rule out collective dominance.

homogeneous products, mature technology, significant entry barriers, limited countervailing buying power, shortage of potential competition, various informal links between undertakings, sanctions or retaliatory mechanisms, and a shortage of (or little scope for) price competition.

326. PTA's draft analysis of the relevant market can be found in Section 6.2, and many of the conclusions in that section apply to an examination of whether the criteria for joint market domination exist.

Significant market concentration

327. There is considerable concentration in the market for call termination, which scores over 5,000 on the HHI⁶⁷ index in terms of share measured by volume of traffic. Only two undertakings, Síminn and Vodafone, operate in this market. Under conditions like these, there is a greater likelihood of collective dominance. A high level of concentration need not mean, however, that the market promotes collusion; other factors must come into play. In this context, PTA wishes to draw attention to the fact that because Iceland has a small population and a small electronic communications market in comparison with other European nations, there is little likelihood that the level of market concentration in Iceland will be low, as market conditions do not support a large number of competitors. It is unlikely that this situation will change significantly in coming years. PTA considers it appropriate to bear this in mind in evaluating the importance of this criterion here.

Transparency

328. Price lists for call transit are not complex, and Síminn publishes its price list on its website as part of its general reference offer for interconnection. However, Vodafone does not publish a price list for transit services. Síminn is Vodafone's largest call transit customer and, as such, is informed of the prices charged for the service. On the other hand, Síminn has difficulty keeping abreast of what prices Vodafone charges other undertakings.

329. Because the vast majority of the business in the transit market is between Síminn and Vodafone, prices and terms in this market are largely transparent. The same applies to Síminn's business with other parties, as they are governed by Síminn's reference offer. It is only Vodafone's business with other parties that is not as transparent, and this involves only one customer, Nova.

330. On the whole, it must be concluded that the market for call transit is considerably transparent because the vast majority of the business in that market takes place on terms that are known to all parties.

A mature market and stagnation in demand

331. In PTA's estimation, the market for call transit appears rather mature. The entry of new operators in the mobile phone and voice call markets could bolster demand for transit services. The same can be said of increased mobile phone use, as all traffic between mobile

⁶⁷ The Herfindahl-Hirschman-coefficient. To obtain the HHI coefficient, the market share of each undertaking in the market is squared and all of the results added together. The value of the coefficient lies between 0 and 10,000. As its value rises, market concentration is deemed greater. If the result is under 1000, no action is thought necessary. If the result is between 1000 and 1800, the market is moderately concentrated, and if it is over 1800, there is significant concentration.

networks is routed through telephone networks. On the other hand, there are limits to how much the market for these services can grow. It appears that new undertakings in the fixed-line market have difficulty. They have increased in number from time to time during the past decade, but such increases have always ended with mergers among smaller operators, and now there are only two companies that operate their own telephone networks. Users of mobile phone services have increased steadily in number in recent years. However, at present the number of mobile phone users exceeds the population of the country; therefore, it is likely that this market is nearing the top of its growth potential.

332. PTA considers the market for call transit services quite mature. There is still some growth potential, but it is not expected that this market will experience any rapid growth in the near future.

Homogeneous products

333. The more homogeneous products or services are, the greater are the possibilities for price competition between the undertakings in question, which could lead to collusion. From a technical standpoint, Vodafone and Síminn's transit services are comparable, as they are based on standard technology. On the other hand, the supply of the service is not handled the same by the two companies. Síminn publishes a price list for the service and has customers that purchase transit to Síminn's mobile network and transit to third-party networks. Transit service is not included in Vodafone's reference offer, however, and the company only handles call transit into its own mobile network.

334. In essence, the transit services of both operators can meet the needs of companies that need call transit. However, a number of factors encourage companies to purchase transit services from Síminn, as direct interconnection with Síminn offers direct access to a larger number of end users.

335. Because of the difference in usage of the transit services offered by Síminn, on the one hand, and Vodafone, on the other, PTA considers that the homogeneity of the service does not indicate unequivocally that this is a case of joint dominance.

Comparable cost structure

336. PTA does not have itemised figures on the cost structure for Síminn and Vodafone's transit services. In view of the fact that the entire country is a single interconnection area and the interconnection points of both companies are located in Reykjavík, PTA considers that that cost structure for this service should not be vastly different over the long term. It could be that Vodafone still has some inefficiency in the operation of the service because of mergers with other companies, but the company has been operating on the market for 10 years; therefore, PTA is of the opinion that the cost structure in the relevant service market should not be very different from that at Síminn.

Comparable market share

337. Behaviour that interferes with competition, in the form of co-ordinated actions, is likelier to occur when the market share of the undertakings involved is similar or comparable. A large difference in market share between two companies reduces the likelihood of joint

market dominance. As is stated in Section 6.2.1, Síminn has a [60-65%]⁶⁸ market share and Vodafone a [35-40%]⁶⁹ market share in terms of volume of traffic. The difference in Síminn and Vodafone's market share is 20-30 percentage points, which is considerable, in the opinion of PTA, and prevents the fulfilment of the criterion concerning comparable or similar market share.⁷⁰

338. In addition, Síminn has a 100% market share in the part of the market that involves call transit to a third-party network.

Mature technology

339. In PTA's opinion, the technology that is used for call transit on telephone networks is rather general and is accessible to all. It is hardly possible for an undertaking to distinguish its transit service from the transit service of other undertakings on the basis of differing technological solutions. The advent of VoIP provides for the possibility of conveying telephone traffic in different manner than has been practiced hitherto, but PTA considers that, in view of the developments of the past few years, it can be concluded that VoIP technology will not have substantial effects on conditions in the telephone market during the time horizon for this analysis. PTA is of the opinion that, in general, the technology in the relevant market is relatively mature.

Significant entry barriers and a shortage of potential competition

340. As is stated in Section 6.2.3, one of the chief entry barriers in this market is that companies wishing to provide transit services must establish direct interconnection with other telephone companies on the market. Most, if not all, companies that have entered the telephone market in Iceland have elected to establish direct interconnection with Síminn. Due to the small size of the market and the expense involved in establishing interconnection, only a few companies have had the financial strength to connect to more than one operator by means of direct interconnection. This is a barrier for new undertakings wishing to enter the market, but it is also a barrier for Vodafone, which only has direct interconnection with two operators. Because of entry barriers, it is not foreseeable that new competitors will enter this market in the near future.

341. Entry barriers and a shortage of potential competition create conditions conducive to collusion. However, it is appropriate to bear in mind that the entry barriers described above also affect Vodafone's possibilities for expanding its operations on this market; thus they actually deter the companies from acting in concert in the market.

Limited countervailing buying power

342. As is stated in Section 6.2.6.1, PTA is of the opinion that purchasers' countervailing buying power is generally limited in the relevant market. The operations of the companies that purchase transit services from Síminn and Vodafone are small in scope. These companies have limited ability to affect prices and terms, and they generally do not have the financial strength to establish direct interconnection instead of purchasing transit services. Síminn and

⁶⁸ Deviation band included for reasons of confidentiality.

⁶⁹ Deviation band included for reasons of confidentiality.

⁷⁰ A similar difference in market share was not considered to indicate collective dominance in the PTA analysis of Market 15; cf. the Rulings Committee for Electronic Communications and Postal Affairs ruling of 3 July 2007 in Case no. 2/2007.

Vodafone are the largest purchasers of transit services in Iceland, and they purchase this service from one another. It is possible that they have some power in those transactions; for example, they could demand direct interconnection with each other's mobile network if the price for transit service rises too high.

343. The fact that the buying power of companies other than the sellers in this market is limited could be an indication of joint dominance.

Various informal links between undertakings

344. There are significant formal and informal links between Síminn and Vodafone, which exist in most cases because of business activities between them, often on the basis of legal requirements; e.g., commerce resulting from number portability, regular meetings on interconnection, etc. The two companies also engage in formal collaboration, such as that pertaining to the operation of Hid íslenska númerafélagid (The Icelandic Number Company) and Farice. It is not possible to ignore the fact that each of the two companies is the other's largest customer and that this results in many types of interaction between them. Despite various formal and informal links between the two companies, PTA is of the opinion that there is little to indicate that these links are abnormal; on the contrary, they seem rather to be necessary for the resolution of various problems that come up. These links between the companies create conditions conducive for co-ordination of activities, but it must be considered as established that more criteria are needed in order for a suspicion such co-ordination to arise.

Retaliatory mechanisms

345. In order to come to a conclusion concerning joint dominance, there must be in place a sanction system; that is, possible mitigating measures that prevent companies to violate the arrangements concerning co-ordinated actions. An example of this could be a threat to engage in significant price competition, which would have varying consequences for the companies involved. Síminn and Vodafone charge the same price for call transit services, which indicates limited price competition between the companies in this market.

346. In spite of co-ordination of prices, PTA has not found any satisfactory evidence to indicate the existence of a credible sanction system that causes the companies not to compete more than they do with respect to prices and service. In this context, it is worth mentioning that Vodafone does not seem to attempt to attract transit service customers. Although Síminn and Vodafone charge the same transit prices from one another, PTA does not view this as an indication of concerted behaviour; furthermore, a price war is not likely to ensue if one of the companies should decide to lower its call transit prices.

347. Given the foregoing, it is PTA's opinion that there is no sanction system in the market for call transit on the telephone networks.

A shortage of, or limited scope for, price competition

348. Prices for Síminn's call transit services have been unchanged since 2000, with the exception of the ISK 0.15 connection fee per telephone call, which was added in 2006. Vodafone's prices are the same as Síminn's. This indicates that there is no price competition between the companies.

349. In PTA's estimation, a shortage of price competition in this market does not necessarily indicate joint dominance because of the special conditions reigning in Iceland. PTA is of the opinion that the main reason the companies charge the same price is that each is the other's largest customer, and this business is largely due to the fact that, for reasons of economy, the companies choose to have only one direct interconnection between their telephone networks, and they convey all mobile phone traffic through the fixed telephone network.

350. PTA believes that it would be relatively meaningless for Vodafone to engage in price competition in this market, as Síminn is in a dominant position because its networks have a far greater number of users, as has been described previously. Actually, Vodafone has not sought to enter this market except with respect to call transit into its own mobile network.

351. PTA's conclusion is therefore that, even though there is no price competition in this market, this does not indicate the presence of joint dominance.

6.3.3.2 Summary

352. Examining the relevant assessment criteria, cf. Section 6.3.3.1, reveals that the market is characterised by certain factors that could indicate the presence of joint dominance. The characteristics that exist and indicate joint dominance are significant concentration, transparency, a mature market, comparable cost structures, mature technology, and limited countervailing buying power among purchasers. The characteristics that PTA considers not to exist are homogeneity of service, comparable market share, and a sanction system. Furthermore, PTA considers that other preconditions exist to some extent but do not indicate the presence of co-ordinated action by the companies in view of the conditions in this particular market. These are entry barriers and a shortage of potential competition, informal links between the operators, and a shortage of price competition. PTA considers that, on the whole, this set of circumstances is not conducive to a conclusion that the companies have joint dominance in accordance with the requirements set forth in Paragraph 98 of the ESA Guidelines.

353. PTA is of the opinion that the conditions in the relevant market indicate much more strongly that Síminn alone has significant market power. Síminn is the larger of the two companies, with greater overall strength, and, in PTA's estimation, it has significant market power in many related markets. According to the preliminary draft analyses of the retail and wholesale markets for voice call services, Síminn has significant market power in all of them; furthermore, Síminn has significant market power in the mobile phone markets for both call origination and call termination. This strength possessed by Síminn in the related markets and the company's large number of end users, as compared with other electronic communications undertakings in Iceland, tends to reinforce the company's strength in the market for call transit on telephone networks.

354. PTA considers Síminn and Vodafone's behaviour in the relevant market clearly dissimilar. As is stated above, Síminn offers comprehensive transit services, while Vodafone offers transit services only into its own mobile phone network. Síminn includes call transit in its reference offer and publishes terms and prices for the service, while Vodafone does not include transit services in its reference offer and negotiates separately with each applicant for call transit. It is likely that Vodafone operates in this market only because of the arrangement between Síminn and Vodafone interconnection with their mobile networks. Due to the small

size of the Icelandic electronic communications market, companies seek to have as few interconnection points as possible so as to minimise costs. For this reason, Síminn and Vodafone have their mobile networks connected only to their own telephone networks. No companies have requested direct interconnection with their mobile networks. Therefore, Vodafone handles transit through its telephone network to its own mobile network, but Vodafone did not have any customers for transit services to other networks.

355. It is the opinion of PTA that a shortage of effective competition in the relevant market does not result from collective dominance between the operators. PTA considers that there is no conclusion to indicate that these two operators act in concert. There are not sufficient indications to suggest that the companies act as one entity vis-à-vis other electronic communications undertakings, customers, or consumers, as several important criteria for joint dominance are not met. Considering the foregoing, PTA is of the opinion that there is insufficient reason to come to the conclusion that joint dominance exists in the relevant market at this time.

6.3.4 Assessment of significant market power

356. As is stated in Section 6.2 on the assessment of criteria for significant market power and in Section 6.3.2 on Síminn's position in the relevant market, most factors indicate that Síminn has significant market power in the relevant market.

357. Section 6.3.3 examines the factors that could contribute to joint dominance, and the result of that analysis is that there is no reason to conclude that Síminn and Vodafone act in concert in this market; therefore, joint dominance does not exist.

358. Based on these factors and the results of the analysis of the relevant market, it is PTA's assessment that Síminn possesses significant market power in the wholesale market for transit service for voice calls on fixed public telephone networks (Market 10). In view of this, PTA intends to designate Síminn as having significant market power in the relevant market.

7.0 Imposition of obligations

7.1 Remedies — general

359. Pursuant to Article 17, Paragraph 2 of the Electronic Communications Act, the market analysis shall provide the basis for decisions as to whether PTA shall impose, maintain, amend, or withdraw obligations on undertakings with significant market power. If a 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, in accordance with Article 18 of the Electronic Communications Act, to impose at least one specific obligation on the operators designated with SMP. If PTA has previously imposed specific obligations on operators pursuant to the previous Telecommunications Act, these shall be reviewed and either maintained, amended, or withdrawn in accordance with the results of the market analysis.

360. 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.⁷¹ These obligations are described more fully in Articles 28 – 32 of the Electronic Communications Act.

361. In selecting obligations to be imposed in order to solve defined competition problems, it is necessary to use several fundamental principles as guidelines.⁷² All remedies that are imposed shall take into account the nature of the defined competition problem and shall be designed to solve it. They shall be transparent, justifiable, reasoned, and in line with the objectives they are designed to achieve – that is, to promote competition – as well as contributing to the development of the internal market and safeguarding users' interests. Obligations must be proportionate and may not impose heavier burdens on operators than is considered necessary.

362. In the European Regulatory Group of National Regulatory Authorities (ERG) report on remedies, emphasis is placed on promoting infrastructure-based competition through the replication 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 them.

363. 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

⁷¹ See also Articles 9 – 14 of the Access Directive.

⁷² See Article 8 of the Framework Directive.

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.

364. In selecting the obligations that are best designed to promote competition in a given market, it is often beneficial to consider the position that would exist if obligations were not imposed on undertakings in the relevant market and whether it would be sufficient to use competition legislation alone to guarantee effective competition.

7.2 Obligations in effect pursuant to the previous Telecommunications Act

365. When Síminn’s operating licence was issued in 1998, the company was designated as having significant market power in telephone services and networks. That was still the case at the time the present analysis was prepared.

366. On the basis of Temporary Provisions II of the Electronic Communications Act, no. 81/2003, the obligations concerning access and interconnection shall be maintained until a review of obligations has taken place following the market analysis pursuant to the same Act.

367. Síminn’s operating licence contains specific obligations related to interconnection of telephone networks. After the Electronic Communications Act, no. 81/2003 entered into force, an operating licence was no longer assumed, but the obligations concerning access and interconnection were to remain in effect until a market analysis had taken place. For this reason, the above-mentioned obligations contained in the operating licence were set forth in a separate document issued on 5 April 2005. That document specifies the following obligations related to interconnection:

Interconnection terms

The company shall publish itemised terms in accordance with the provisions of ONPCOM98-11bis and a price list for interconnection with its network. These terms and this price list shall be sent to the Post and Telecom Administration for approval. The Post and Telecom Administration may request proof that fees charged are based on actual costs plus a suitable return on investment and, in individual instances, may require changes to the price lists and terms.

The company shall send the Post and Telecom Administration a copy of all contractual agreements for interconnection. The copies shall be received by the Administration within a week of signing. The Post and Telecom Administration is authorised to disclose the agreements in their entirety, or information concerning the contents of such agreements, to all stakeholders. Should the company consider that any part of such an agreement should be exempt from such disclosure because of the business interests of the contracting parties, it shall so state and shall support this assertion at the time the copy of the agreement is sent to the Administration. The Post and Telecom Administration shall decide which portions of the agreements shall be disclosed.

Accounting separation

The company shall practise accounting separation in the following manner:

The operation of all networks or network elements that are used for more than one service or for which access is leased to others shall be separated from other

operations. Accounting shall be carried out so that it is possible to allocate costs for the operation of networks or network elements to the relevant service, leasing activity, network access, or interconnection with other electronic communications undertakings' networks. The separation among various types of service shall be in accordance with Article 1.

Accounting separation for services shall be in accordance with Paragraph 2 of this Article, and in accordance with the Regulation on Accounting and Financial Separation in Electronic Communications Operations, no. 960/2001.

Accounting separation for services that are considered universal service shall also be in accordance with the Regulation on Universal Service, no. 641/2000.

368. Because Síminn was designated as having significant market power according to the previous Telecommunications Act, the company was subjected by law to obligations over and above those specified in the company's operating licence. According to Chapter VI of Act no. 107/1999, Síminn was subjected to the following obligations, which were to remain in effect until a new decision had been made following a market analysis:

- The company shall comply with all realistic and feasible requests for access to network connection points, including network connection points other than those offered to the majority of users.
- The company shall guarantee non-discrimination with respect to the interconnections that it offers and shall grant companies that are considering interconnection access to all necessary information concerning both interconnection and the technological requirements.
- The information that the company receives from undertakings requesting interconnection may only be used for the purpose of establishing that interconnection. The company is prohibited from disclosing such information to any subsidiaries, partners, or departments other than those directly involved in establishing the interconnection.⁷³
- The fees charged by the company for interconnection shall be transparent and based on the cost for network establishment and operation, plus a reasonable return on capital employed on the basis of the cost accounting that shall be maintained.
- The company shall publish a reference offer for interconnection. The reference offer shall contain an itemised description, in accordance with the needs of the market, of the interconnection offer and related terms and conditions, including price lists. The reference offer shall include the price for access to all services available on the company's network. PTA may prescribe reasoned changes to the reference offer. The Post and Telecom Administration may also adopt rules concerning the contents of interconnection agreements and reference offers.
- Fees for interconnection shall be itemised sufficiently that the applicant for interconnection need not pay for anything that is not directly related to the requested service.
- A description of cost accounting that shows the primary cost items and the rules that apply to entries related to interconnection costs shall be accessible.

⁷³ Corresponding rules now apply to all electronic communications undertakings; cf. Article 26 of the Electronic Communications Act, no. 81/2003.

369. Further rules were adopted concerning the contents of reference offers and the execution of accounting separation; these are the Rules concerning Reference Offers for Interconnection, no. 94/2002, and the Regulation on Accounting and Financial Separation in Electronic Communications Operations, no. 960/2001.

370. Electronic communications undertakings other than Síminn were not subjected to specific obligations concerning interconnection of telephone networks, except that they were required to conclude interconnection agreements pursuant to Article 23, Paragraph 1 of the Telecommunications Act, no. 107/1999.⁷⁴ No other undertaking was designated as having significant market power in telephone services in the sense of Article 24 of the Act.

7.3 Competition problems

7.3.1 General – problems in competition

371. Obligations are imposed on undertakings with significant market power with the objective of counteracting actual and/or potential competition problems in the market under scrutiny. The term competition problems refers to any behaviour by an undertaking with significant market power that, intentionally or unintentionally, forces competitors out of the market, prevents potential competitors from entering the market, and/or is contrary to the interests of consumers. When obligations are imposed in accordance with electronic communications legislation, it is not required that such an undertaking actually abuse its dominant market position. It is enough that a competition problem could conceivably emerge under the given circumstances.

372. Síminn's current services in call origination, termination, and transit have been subjected to official monitoring designed to prevent various competition problems. As a result, specific competition problems emerged to a more limited degree than could otherwise have been expected in these markets. The Post and Telecom Administration's description of competition problems is therefore based primarily on potential problems; that is, competition problems that could arise if specific obligations were not imposed. PTA is of the opinion that, in view of the fact that Síminn's service in related retail markets affects the company's total profitability, the company has a strong incentive to engage in anti-competitive behaviour in these wholesale markets. PTA is also of the opinion that it would be possible to obstruct competition in many ways if the company were not subjected to specific obligations in these markets.

7.3.2 Competition problems in the market for call origination in the fixed-line network

7.3.2.1 General

373. In the analysis of Market 8, PTA came to the conclusion that effective competition did not exist in the market for call origination. Síminn's market share in this market is now [75-80%].⁷⁵ Competition problems in the market for call origination emerge primarily as entry barriers related to services based on PSTN/ISDN. The significant sunk costs and substantial

⁷⁴ Corresponding provisions can now be found in Article 24 of the Electronic Communications Act, no. 81/2003.

⁷⁵ Deviation band included for reasons of confidentiality.

economy of scale related to the infrastructure that Síminn has built up are the underlying reasons for these entry barriers. In addition, countervailing buying power is limited.

374. Considerable competition problems have surfaced in relation to call origination in Internet phones. For example, when this service entered the market in 2006, Síminn refused to open for numbers and register number services that PTA had allocated to Atlassími at the same time that comparable service was sold by Síminn. This generated a dispute that had to be resolved by the Rulings Committee for Electronic Communications and Postal Affairs, and it delayed the entry of Síminn's competitors into the market.⁷⁶

375. Competition problems in the market for call origination can be divided into two main categories. first, problems related to vertical exertion of market power, and second, problems related to the significant market power of a single undertaking. The following section reviews the various competition problems that could emerge in this market. While this summary is not necessarily exhaustive, it includes a number of potential competition problems that PTA has identified in view of the conditions that would exist if no obligations were imposed in this market.

7.3.2.2 Vertical exertion of market power

7.3.2.2.1 Vertical exertion of market power – general

376. When a vertically integrated undertaking with significant market power in a wholesale market attempts to transfer its market power to a related retail market, this is referred to as vertical exertion of market power. Vertical exertion of market power can be defined as a dominant undertaking's denying competitors access to necessary infrastructure in order to transfer its monopoly position from one sales level to another. In a market that is not monitored at the wholesale level, and where there is active competition at the retail level, there is generally no incentive for a service provider with significant market power at the wholesale level to try to wield its market power at the retail level because the service provider can exert its market power at the wholesale level to the extent that it chooses.

377. If, for any reason, an undertaking cannot fully utilise its market dominance at the wholesale level, this can lead to a situation where vertical exertion of market power could create competition problems. If an undertaking with a dominant market position at the wholesale level is subjected to strict price controls, for example, that service provider has an incentive to exert its market power in a comparable manner at a later sales level because it is unable (because of price controls) to fully utilise its market power at the wholesale level. In general, it can be assumed that the more stringent the monitoring of the wholesale level, the more common it will be that vertical exertion of market power will exist.

7.3.2.2.2 Refusal of access

378. PTA is of the opinion that because Síminn has significant market power in the market for call origination at the wholesale level, the company has a great incentive to refuse access to other service providers that offer competitive prices at the retail level. If this is done, it will greatly diminish competition in the retail markets for voice call services on fixed-line

⁷⁶ See the provisional decisions by PTA, dated 19 April and 8 May 2006, and the ruling by the Rulings Committee for Electronic Communications and Postal Affairs in Case no. 7/2006.

networks. If there were sufficient competition at the retail level – for example, due to potential competition from other infrastructure/technological solutions – refusal of access would not necessarily result in less competition at the retail level.

379. Refusal of access can also emerge as a competition problem in that wholesale operators with significant market power could refuse to do business with their competitors in the retail market or could provide their services on unfair terms.

380. Competition in the retail market for PSTN/ISDN is based to some degree on access to call origination services from Síminn. Very few of Síminn's competitors have the option of using other connections as a basis for their retail services. Refusal of access could therefore force existing service providers out of the retail market or could prevent the entry of potential competitors into the market. At the same time, Síminn has the incentive to refuse access because, in doing so, it could eliminate a large part of the competition in the relevant retail markets. This could then lead to rising prices and increased profitability in the market. Refusal of access is therefore one of the main competition problems that can emerge in the market for call origination.

381. Article 24 of the Electronic Communications Act, no. 81/2003 contains a provision stating that electronic communications service providers have the right to interconnection agreements with other electronic communications undertakings that operate public electronic communications services or networks. Refusal of access is therefore not a current competition problem as long as this requirement is met.

7.3.2.2.3 Exertion of market power through pricing

7.3.2.2.3.1 General

382. It is possible to exert market power vertically through, for example, discriminatory pricing and cross-subsidy designed to limit a competitor's business at the retail level, increase his costs, or create a margin squeeze. In this context, a margin squeeze results when the difference in the wholesale access price and the retail price of the vertically integrated service provider is so small that competitors in the retail market cannot return an adequate profit, and may therefore be forced out of the market.

7.3.2.2.3.2 Discriminatory pricing

383. Síminn could practise discriminatory pricing in order to increase its competitors' costs at the retail level in comparison with its own retail operations. In this way, it is possible to exert pressure on competitors through a margin squeeze.

384. Furthermore, Síminn can practise price-based discrimination against external service providers on the demand side of the wholesale market. The aims of price discrimination could be to reward competitors that are loyal to Síminn or to increase the costs of service providers that are the company's greatest threats in the market.

385. Síminn can discriminate with respect to prices by charging various prices for the same service. But it is also possible to discriminate indirectly; for example, when a wholesale price

list is structured so that it is difficult for competitors to maintain the retail prices they would like to – for instance, because of extra charges at the wholesale level.

386. Price discrimination is not necessarily a competition problem, however. For example, offering bulk discounts based on objective criteria is often not a competition problem. However, if the discount threshold is high enough that no one receives a discount except the service provider's own retail division, price discrimination becomes a competition problem.

7.3.2.2.3.3 Cross-subsidy

387. Cross-subsidy affects pricing in at least two of the markets under discussion: the wholesale market for call origination and the related retail market for telephone traffic. This competition problem is related to some degree to discriminatory pricing, and there is considerable overlapping of the two.

388. Síminn can exert vertical market power by charging prices in excess of costs in the wholesale market and charging prices below costs in the retail market. In this way, it is possible to use revenues from the wholesale market to offset losses in the retail market. The consequence is a margin squeeze that can exclude competitors from the retail market.

7.3.2.2.4 Exertion of market power through means other than pricing

7.3.2.2.4.1 General

389. It is possible to exert market power and discriminate through various means other than pricing. This is particularly the case if a service provider with significant market power in the wholesale market is subjected to monitoring of its access prices, which makes price discrimination difficult or impossible.

390. Examples of such competition problems are deliberately delaying service, making inappropriate demands, discriminating with respect to quality, and misuse of information on competitors. These are further described in the sections that follow. Problems of this sort can give an incumbent operator a so-called first-mover advantage over its retail competitors, thus limiting their possibilities in the retail markets.

7.3.2.2.4.2 Delays in service

391. If an undertaking with significant market power grants its retail competitors access to necessary connections but is slower to provide the service to competitors than to its own retail department, this is a competition problem.

392. Examples of ways to delay service include unnecessarily prolonged contract negotiations or citing technological problems that are either nonexistent or easily solved.⁷⁷ A problem of this sort creates uncertainty for competitors and can increase their costs as well. If Síminn deliberately delays contract negotiations or delivery of services for call origination,

⁷⁷ See, for example, PTA's decision dated 27 April 2001 in the dispute between Halló and Iceland Telecom.

this is actually a temporary refusal of access.

393. Síminn's retail department could also profit by protracted contract negotiations at the wholesale level involving promotions of new service elements. Under such conditions, the internal retail department could gain an advantage in the market by offering the new services in advance of competitors, who need more time to incorporate innovations into their operations than Síminn's own departments do.

394. The current regulatory framework has partially prevented Síminn from using delaying tactics in the market for call origination, especially because Síminn is required to offer call origination in accordance with the reference offer for interconnection. However, Síminn must be considered to have an incentive not to offer call origination; therefore, PTA considers it likely that the company could use delaying tactics when it is required to grant access if there are no limits on the length of time the company has to deliver the service. Delays could be a particular problem if the request involves a service that is not included in Síminn's reference offer for interconnection. Síminn has the incentive to delay service deliberately in order to undermine the competitiveness of other service providers; therefore, this could be considered a competition problem.

7.3.2.2.4.3 Inappropriate demands

395. Among potential competition problems are all contractual terms and conditions that make special demands of competitors at the retail level and are not necessary in order to deliver the wholesale product but increase the competitor's costs or limit sales at the retail level. Examples of such demands are unnecessarily high security fees, unfair payment terms, and long waiting periods.

396. PTA is of the opinion that inappropriate demands in the purchase of call origination in the fixed-line network could be a potential competition problem.

7.3.2.2.4.4 Discrimination with respect to quality

397. A vertically integrated service provider with significant market power could both raise competitors' expenses and limit their sales by discriminating with respect to quality. Costs rise if poorer quality forces competitors to invest further or take other action in order to compensate for the lack of quality. Demand drops when it is impossible to offer the same quality as before and users are dissatisfied with the quality available.

398. Síminn offers connections to both internal and external service providers and therefore has both the opportunity and the incentive to practise discrimination in the retail market in terms of sales to its own retail division, on the one hand, and to other service providers, on the other. At times, Síminn's competitors have maintained that the processing of orders for pre-selection and number entry take much longer when users want to switch from Síminn to a competitor than when they want to switch from a competitor to Síminn. PTA has carried out measurements that show that the transfer of numbers to Síminn is handled much more quickly than is number transfer to competitors. In PTA's estimation, Síminn would have the incentive to practise quality discrimination in this manner if it were not prohibited.

399. PTA is therefore of the opinion that quality discrimination in the purchase of call origination in the fixed-line network could be a potential competition problem.

7.3.2.2.4.5 Misuse of information about competitors

400. Misuse of information on competitors can take place when a service provider with significant market power in the wholesale market receives information on a competitor's customers in the retail market when the competitor purchases necessary connections. If this information is disclosed to the wholesaler's retail division, it is possible to use them for sales purposes or, in a marketing context, to design services to suit the competitor's customers. However, the competition authorities have prohibited Síminn from contacting users that switch from Síminn to other telephone service providers.⁷⁸ Furthermore, there is a provision on information use in Article 26 of the Electronic Communications Act, no. 81/2003, that is designed to address this problem.

401. PTA is of the opinion that the regulatory environment prevents this to some extent from being a competition problem.

7.3.2.2.4.6 Unannounced changes in prices and products

402. Initial fees are generally a rather important part of the retail prices charged by Síminn competitors that do not control their own access networks. If Síminn raises its initial fees before the operators that purchase call origination from the company have a chance to adjust their retail prices accordingly, this could reduce these operators' profits temporarily.

403. It is also possible to change the content of a given service without its being reflected in the price. Changes in service can also lead to changes in retail products that should be announced with advance notice. If an undertaking does not do this in a timely manner, it can cause problems and generate discontent, which weakens its reputation in the market. This can also cause competition problems in the market.

7.3.2.3 Dominant market position

7.3.2.3.1 General

404. In addition to the problems that stem from vertical integration are other problems that can result from Síminn's significant market power in the wholesale market for call origination. It is possible to identify three different manifestations of an undertaking's market power:

- Measures to obstruct access to the market
- Misuse for financial gain
- Inefficiency in production

⁷⁸ See Competition Council Decision no. 23/2002. Complaint filed by Halló! – Frjáls fjarskipti ehf. due to Iceland Telecom hf.'s abuse of a dominant market position. See also Competition Council Decision no. 39/2003 and Competition Authority Decision no. 11/2006.

These three primary competition problems are further described below.

7.3.2.3.2 Measures to obstruct access to the market

405. This refers to competition problems wherein an undertaking with significant market power attempts to introduce new entry barriers against potential market entrants and/or maintain existing barriers. An example of a measure designed to obstruct access to the market is raising the costs users incur in switching service providers through binding contractual terms. In PTA's estimation, it is rather unlikely that such competition problems will emerge by themselves in the call origination market. PTA is of the opinion that Síminn has no incentive to try to establish new entry barriers in the market for call origination because it is considered unlikely that new operators will try to gain a foothold in that market.

7.3.2.3.3 Exploitative behaviour

406. This type of competition problem is often referred to as "typical monopoly behaviour." Under these conditions, a service provider charges abnormally high prices or practises price discrimination in order to profit to an abnormal degree.

407. PTA is of the opinion that excessive prices could be a serious competition problem in the market for call origination. Assuming that Síminn is obliged to grant access to call origination, if the company were free to price that access as it chose, PTA thinks it likely that Síminn would charge prices far in excess of the underlying cost of the service. This high price charged by Síminn for its call origination services would both limit the competitiveness of other service providers in comparable retail markets and generate greater profit for the company ("abnormally large profit"), and society would pay for it. Abnormally large profit can also promote competition problems because of cross-subsidy.

7.3.2.3.4 Inefficiency in production

408. Competition problems of this type involve various sorts of inefficiency in production that can be traced to a lack of competition. The market under scrutiny is not subject to the influence that competition is considered to exert on production efficiency. Examples of this type of competition problem are insufficient investment, abnormally high costs/inefficiency, and poor quality.

409. Internal and external call origination services generally stem from the same source. If there is insufficient investment, abnormally high cost/inefficiency, and/or poor quality, it can also be expected that this inefficiency in production will have the same negative effect on Síminn's retail operations as it does on the company's competitors in the retail market. Therefore, Síminn is not considered to have the incentive to permit inefficient production, and this is unlikely to be a competition problem in the call origination market.

7.3.3 Competition problems in the market for call termination in the fixed-line network

7.3.3.1 General

410. Most potential competition problems in the market for call termination are comparable to those described in the ERG⁷⁹ report on the obligations that may be imposed on electronic communications undertakings with significant market power in order to promote competition.⁸⁰ Nonetheless, PTA has identified a few other competition problems.

411. The competition problems under discussion here primarily involve operators that offer fixed-line services on their own network and therefore have a virtual monopoly on call termination for the customers connected to these networks. In addition, there are insurmountable technological entry barriers to individual termination markets during the time horizon of this analysis. As long as the CPP principle remains entrenched, there will be significant limitations on the potential for effective competition. This can be viewed as a fundamental problem in the market for call termination.

412. The competition problems that PTA has defined generally apply to all termination in the fixed-line network. The fact is, however, that Síminn carries out the bulk of all termination in fixed-line networks, which means that some of the competition problems apply primarily to Síminn's termination service and rather than to that of other service providers. The following section discusses competition problems in the relevant market. It is appropriate to distinguish between Síminn and other operators that offer call termination.

7.3.3.2 Refusal of access

413. Other things being equal, operators that offer call termination should have a normal incentive to offer interconnection. Network utilisation increases as the number of network users increases, which indicates that those offering fixed-line connections wish to conclude interconnection agreements with others.

414. On the other hand, it is possible to imagine circumstances where it could be advantageous to a large service provider with many users to reject interconnection based on call termination. This can be quite important with regard to smaller service providers with few users, and it would not make a marked effect on the quality of the larger company's telephone service even though users of the small service provider's network do not have the option of calling users connected to the large service provider. In this way, the large service provider could force small service providers out of the retail market. Rejection or delay in interconnection is a competition problem.

415. Small providers of termination services have little market power and cannot force other service providers out of the retail market by refusing access to call termination. On the other hand, refusal of access to termination services by small service providers could indicate the existence of a competition problem. This is particularly the case when it is critical for users from other service providers to call users of the service provider that refuses call

⁷⁹ Abbreviation for "European Regulatory Group of National Regulatory Authorities".

⁸⁰ ERG Common Position on the approach to appropriate remedies in the new regulatory framework.

termination.

416. Service providers with a limited number of customers and capital are sometimes interested in concluding indirect interconnection agreements (so-called proxy agreements) at the outset instead of negotiating directly with all of the service providers offering call termination in the fixed-line network. Proxy connection refers to a third party's offering a service provider termination in another service provider's network; that is, transit services as these are defined in the market analysis. Therefore, it is actually possible to conclude an interconnection agreement with one other undertaking. A proxy agreement can prove to be less expensive than a number of interconnection agreements involving direct interconnection. If an undertaking does not have the option of interconnection with other fixed-line networks via proxy service (transit service), this can function in the same way as refusal of access and can represent a competition problem.

417. If an undertaking has no incentive to conclude interconnection agreements, obstructs the conclusion of such agreements by various means, or deliberately delays negotiations, the result is a situation similar to refusal of access. It is typical that operators resort to such measures if they are required to comply with reasonable requests for interconnection but are not subjected to any defined time limits for negotiation. Delaying tactics can therefore be a competition problem even though an obligation to grant access is in effect.

7.3.3.3 Excessive pricing

418. Service providers with significant market power in markets for call termination on fixed-line networks have both the opportunity and the incentive to charge termination prices in excess of underlying costs. Under such circumstances, termination prices will be higher than they would be in a market characterised by effective competition.

419. Smaller service providers of call termination in fixed-line networks can respond to excessive pricing by Síminn by raising their own termination prices accordingly, and vice versa. Until now, Síminn alone has been subjected to price controls in the market for call termination and was forced, as a result, to lower its termination prices in 2000. Vodafone, however, which has not been subjected to price controls related to its call termination prices in the fixed-line network, raised its price significantly in 2002 and has charged about 50% more than Síminn ever since.

420. Higher termination prices charged by individual service providers have resulted in higher retail prices for calls placed to the networks concerned. Today, however, most if not all Icelandic electronic communications undertakings charge the same price for calls to all fixed-line networks, even though the termination prices vary.

421. In recent years, the trend has been toward reciprocity in pricing and toward other service providers' charging higher termination prices than Síminn. PTA is of the opinion that a situation could still arise where neither Síminn nor any other party could prevent an operator's charging termination prices that are both unfair and inefficient from a financial point of view. PTA also takes the view that, if it is decided that these service providers shall have the freedom to price their services as they choose, this could promote abnormally high prices. PTA considers excessive pricing the most prominent competition problem generated by smaller operators in the market. Most indicators suggest that Vodafone's termination

prices are too high. In comparison with Síminn and the foreign undertakings used as a comparison in Section 2, Vodafone charges very high prices that are not in line with the prices that can be expected from companies that operate termination services in an efficient way. The Administration considers these high prices to be a problem that is detrimental to competitors and consumers. In general, in the early days of competition in the telephone markets in Europe, no comment was made if new operators charged higher termination prices than incumbent operators did. Higher termination prices were viewed as assistance to small parties trying to gain a foothold in the market. Today, however, this is no longer tolerated. First, more than 10 years have passed since the market was liberalised; second, experience has shown that asymmetrical termination fees are not the most advantageous way to promote effective competition in the markets. Reference is made to this in the ERG Common Position on symmetry in call termination prices⁸¹ and the European Commission's draft Recommendation on termination prices, together with the accompanying Explanatory Note.⁸²

422. High termination prices are disadvantageous to competition for those service providers in the retail market for telephone services (on fixed and/or mobile networks) that do not offer call termination in the network concerned. As a result, PTA considers that prices could become abnormally high if price controls are not in effect and that abnormally high prices could therefore be viewed as a potential competition problem in all call termination services.

7.3.3.4 Informal price-fixing

423. Service providers that offer call termination and compete at the retail level can agree to charge termination prices that are to the advantage of both operators, which is actually a informal price-fixing. The typical method used is to charge high reciprocal termination charges in circumstances under which termination prices are not monitored.

424. In general, Síminn would profit most by such an arrangement because Síminn usually receives invoices for a small number of termination minutes from small providers of termination service, while it charges those same service providers a for a much higher number of minutes. The reason is that Síminn invoices small service providers for both termination of calls to their own users and for termination of calls to users with pre-selection.

425. High reciprocal termination charges in the fixed-line network distort the competitive position among service providers offering fixed-line phone services based on carrier selection, those offering mobile phone services, and those offering international calling with termination in Iceland. As a result, informal price-fixing among those offering call termination in the fixed-line network could constitute a competition problem.

426. Síminn has been required to charge cost-oriented termination fees since the fixed-line phone market was deregulated in 1998; therefore, price-fixing between Síminn and one or more other service providers has not been a genuine problem. Neither does it appear that informal price-fixing has taken place among other service providers. Nonetheless, in PTA's

⁸¹ ERG's Common Position on symmetry of fixed call termination rates and symmetry of mobile call termination rates ERG (07) 83 final 080312.

⁸² Draft COMMISSION RECOMMENDATION of [...] on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU and *Draft COMMISSION STAFF WORKING DOCUMENT EXPLANATORY NOTE Accompanying document to the COMMISSION RECOMMENDATION of [...] on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU.*

estimation, such collusion would represent a competition problem if termination prices were not monitored.

7.3.3.5 Price discrimination

7.3.3.5.1 Price discrimination vis-à-vis parties seeking call termination in the fixed-line network

427. An operator that offers call termination can have the incentive to offer differing terms to different customers. For example, it is conceivable that a service provider wishes to charge a higher termination price to operators that offer him stiff competition in the retail market than to other service providers. Such an operator could also charge lower prices to related parties (for example, Síminn could charge its own mobile phone services a preferential price) than to others.

428. Such discrimination in call termination could distort the competitive position in the retail market. Price discrimination against call termination customers is therefore a potential competition problem.

429. PTA is of the opinion that it is a particular competition problem with respect to Síminn's termination service. This is because Síminn has a strong negotiating position with regard to requests for call termination in other fixed-line networks and because each of the other service providers has only a small volume of termination.

7.3.3.5.2 Price discrimination between on-net and off-net calls

430. It is primarily possible to view price discrimination between on-net and off-net calls as a potential competition problem when the service provider has a proportionally large share of customers on the retail market. This is the case with Síminn. This type of price discrimination means that an undertaking charges a higher termination price for calls originating in other telephone networks than for calls originating in its own. Under these circumstances, the other service providers are forced to raise their retail prices in order to avoid a margin squeeze. Such price discrimination could give Síminn's own retail services a competitive advantage in comparison with its competitors on the retail market.

431. This potential competition problem becomes larger as the difference between external and internal termination prices increases. Price discrimination between these two services is a potential competition problem.

7.3.3.6 Discrimination with respect to factors other than price

7.3.3.6.1 General

432. An undertaking with significant market power could have the incentive to discriminate in favour of its own services in the retail market at the expense of its competitors. Such discrimination could involve service elements, the quality of technological connections, service levels, information quality, etc. It is also possible that the party rendering termination

services will have the incentive to delay negotiations for interconnection and will make unreasonable demands as regards termination (collateral security, bundling of services, etc.) in comparison with other customers in this market. This type of discrimination can function as an entry barrier and can disrupt the competitive foundations in the retail market; therefore, it can be a potential competition problem.

433. In PTA's estimation, this competition problem affects Síminn's call termination service in the fixed-line network more than that of other operators in the call termination market. The reason is that other operators that offer call termination have limited opportunities to discriminate because of Síminn's strong position, both as a dominant seller and as a customer in the termination market.

7.3.3.6.2 Unannounced changes in prices and products

434. Termination charges are generally a rather large portion of the retail price for fixed-line telephone calls. If a seller raises his termination prices and the service providers that purchase termination from him have no opportunity to raise their retail prices accordingly, this can cut into their profits temporarily. The undertaking must announce changes in service, including prices, no later than one month before the change is to take effect. Given the importance of termination charges in the overall pricing of telephone calls, this could undeniably become a competition problem.

435. It could also be possible to change the content of a service without its resulting in a change in price. All changes in service that could lead to changes in retail products must be announced with advance notice. If a seller cannot do this, it can cause problems and generate discontent, which weakens its reputation in the market. This can also cause competition problems in the market.

7.3.3.6.3 Cross-subsidy

436. In the opinion of PTA, it is important to consider competition problems related to Síminn's call termination in the fixed-line network in the context of the retail market for fixed-line phone services. PTA is of the opinion that a competition problem exists if Síminn uses revenues from call termination to subsidise its own retail services. Such cross-subsidy could distort competition in the retail market for fixed-line phone services, which can prove detrimental in the campaign for a sustainable competitive environment. Cross-subsidy that involves other elements in Síminn's operations could also prove to be a competition problem; cf. horizontal transfer of market power. Cross-subsidy is therefore anti-competitive, but it can also foster inefficient utilisation of capital.

437. Cross-subsidy can also be a potential competition problem as regards the service of other operators in Market 9, but to a lesser degree than with Síminn. The reason is that other service providers have much more limited scope to practise excessive pricing than Síminn would if price control obligations were not in effect.

7.3.4 Competition problems in the market for transit services

438. The market analysis revealed that effective competition does not exist in the market for call transit in fixed-line networks and that there is actually little competition at all. It emerged that Síminn has significant market power in this market, due both to its very large market share and to the extensive entry barriers in the market. The underlying reasons for these entry barriers are the high fixed costs that accompany the establishment of a direct interconnection with other service providers. The market is characterised by economy of scale.

439. Competition problems in this market, just like those in the market for call origination, can be classified in terms of the exertion of vertical market power and the effects of one undertaking's dominant market position. PTA has come to the conclusion that competition problems in the market for transit services are basically the same as those identified and described in the market for call origination. The only competition problem that exists in the call origination market but not in the call transit market is misuse of information on competitors. As a result, PTA deems it appropriate to make reference to the discussion of the competition problems in the market for call origination as regards competition problems in the call transit market.

440. Nonetheless, the Administration believes there is reason to point out that the complex competition problems that have been identified in the call origination market do not appear to be as unequivocal in the transit market. This is because there are a greater number of alternatives to Síminn's services in the transit market than there are in the market for call origination. Instead of establishing conventional transit services, it is possible to establish a direct interconnection with all relevant service providers. However, this option is not very significant because of the high initial costs involved.

441. Competition problems in the transit service market are also related to competition problems in the termination market. When requesting conventional transit services from Síminn, an operator also requires termination service for telephone calls from third parties. It is proportionally inefficient and costly for retail service providers with limited telephone services to establish and operate the necessary settlement systems with all possible third parties. Many of the service providers that seek call transit service from Síminn could find it so expensive and inefficient to establish and operate the necessary settlement systems for termination with numerous parties that it could compromise their competitiveness in the related retail markets. If they cannot use the settlement system for payments due to traffic in Síminn's network, this could be viewed as a refusal of access and is therefore a potential competition problem.

7.4 Proposed obligations

442. On the basis of the market analysis, PTA has concluded that obligations should be imposed on Síminn in the markets for call origination, call termination and transit services in voice calls on fixed public telephone networks. Obligations will also be imposed on other providers of call termination services. The following sections define and describe the obligations in greater detail.

7.4.1 Market 8: Call origination on the public telephone network provided at a fixed location

7.4.1.1 Obligation to grant access

443. Article 28, Paragraph 1 of the Electronic Communications Act states that 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.

444. In imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency, and sustainable competition. Article 28, Paragraph 3 of the Electronic Communications Act states that, in deciding to impose obligations pursuant to Paragraph 1, PTA shall consider whether it is:

- a. 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;
- b. feasible to provide the access proposed;
- c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
- d. to the advantage of competition in the longer term;
- e. inappropriate, in view of intellectual property rights;
- f. conducive to increasing the supply of services.

PTA has assessed whether the access requirement is technologically and financially realistic, and whether it would be realistic for a competitor to set up his own infrastructure in competition with Síminn, considering market developments and the nature of the access in question. PTA considers it quite feasible for Síminn to grant the access that is proposed here; furthermore, it considers it justifiable with respect to Síminn's initial investment. PTA considers the obligations conducive to long-term competition and increased supply of services.

445. There is no indication that any electronic communications undertaking has been denied reciprocal interconnection; however, there are known examples where interconnection agreements have taken an unnecessarily long time and negotiations have been difficult, apparently due in large part to inadequate flow of information. PTA considers it important that there be no delays in concluding interconnection agreements and that the undertakings involve not excuse themselves by blaming technological barriers. PTA intends to monitor the process so as to ascertain whether interconnection agreements in the fixed-line network are concluded within a reasonable time frame and whether the technological requirements made are fair. PTA intends to impose on Síminn the obligation to conclude interconnection agreements in the fixed-line network no later than three months after interconnection is requested so as to prevent new electronic communications undertakings from having to tolerate entry barriers in the form of delayed negotiations for interconnection. If contractual negotiations are unsuccessful, either party may request that PTA decide whether an

interconnection agreement shall be concluded, and on what terms.

446. Síminn has been defined as an undertaking with significant market power in the market for call origination in the fixed-line network; therefore, it is required to comply with reasonable requests for interconnection, including call origination. PTA intends to impose on Síminn the obligation to conclude agreements for call origination without inappropriate delays so as to reduce the likelihood of deliberate postponement of interconnection requests. Síminn shall be required to document the amount of time that contractual negotiations take, the progress of the negotiations, and the reasons for delays, if any should arise. These documents shall be made available to the counterparty and to PTA upon request. If Síminn refuses a request for access, it shall provide the undertaking concerned with a documented, grounded reason for its refusal. The document explaining the rejection shall contain all of the information necessary to evaluate the grounds for the refusal.

447. Based on the authority in Article 28 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to respond to reasonable and appropriate requests for access to its fixed-line network and its wholesale call origination services. If Síminn rejects a request for access or does not reply to a request within 14 days, it shall provide the applicant a reasoned written response explaining the rejection. In all instances, interconnection agreements for access to the fixed-line network and for call origination in the fixed-line network shall be concluded within three months of the date the request, including the required information as set forth in the reference offer, is received by Síminn.

7.4.1.2 Non-discrimination

448. Pursuant to Article 30 of the Electronic Communications Act, PTA may impose on electronic communications undertakings with significant market power the obligation to practise non-discrimination in approving requests for interconnection or access. Such obligations should ensure, in particular, that an electronic communications undertaking applies equivalent conditions in equivalent circumstances to other undertakings offering electronic communications services, and that it provides services and information to others on the same terms and of the same quality as those it provides to its own service departments, subsidiaries, or partners.

449. If an obligation concerning non-discrimination is not imposed, Síminn's significant market power in the market for call origination and a shortage of potential substitute services can lead to a situation where the company discriminates against parties that need the service. In particular, the company could have an incentive to sell call origination to unrelated parties at higher prices than it charges its own departments. Such measures could prove damaging to competition and could harm consumers who must pay too high a fee for telephone calls.

450. Even though companies have been guaranteed interconnection at a cost-oriented price, an operator with SMP could attempt to discriminate on premises other than price and thus raise the competitor's expenses in order to drive him out of the market. These could include poor dissemination of information, discrimination in quality of service, and undue requirements in negotiation. Fair, moderate, and reasonable requirements for access, including prices, are a fundamental element in the attempt to promote competition. In the opinion of PTA, the non-discrimination obligation is well designed to mitigate the problems that arise from discrimination with regard to both price and other factors. PTA is of the opinion that the

non-discrimination requirement is both fair and appropriate. It cannot be seen that this requirement involves great expense or disadvantage for Síminn. The non-discrimination obligation does not mean that all companies must operate under exactly the same terms; instead, all differences in terms shall be based on objective considerations.

451. Based on the authority contained in Article 30 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation to practise non-discrimination concerning price and other elements, both with respect to external customers and with respect to internal vs. external customers. The department concerned shall disseminate information to unrelated parties in a manner comparable to that used to disseminate information to the company's own departments or to related parties. Information that Síminn gathers in the preparation of contractual agreements for call origination shall be handled in a manner consistent with the provisions contained in Article 26 of the Electronic Communications Act.

7.4.1.3 Transparency

452. Article 29, Paragraph 1 of the Electronic Communications Act authorises PTA to require that an electronic communications undertaking with significant market power make public specified information in order to increase the level of transparency related to interconnection or access to electronic communications infrastructure; e.g., accounting information, technical specifications, information on network characteristics, terms and conditions for supply and use, and price lists. It is permissible to grant exemptions from the requirement to make information public if the electronic communications undertaking can demonstrate that such publication involves important financial or commercial interests that it is reasonable and appropriate to keep secret.

453. Article 29, Paragraph 2 of the same Act states that when an electronic communications undertaking is required to practise non-discrimination, PTA may require that it publish a reference offer that includes an itemised description of the interconnection or access, together with terms and conditions, including price lists. PTA may require amendments to reference offers and is authorised to set rules concerning their content.

454. The terms for access to networks and services are extremely important for new service providers and can make a decisive impact on their possibility for gaining market share. The competitive position of such operators is clearly in jeopardy if they must be subjected to discriminatory terms. Furthermore, it facilitates entry into the market if potential service providers can determine in advance what terms are available for the access and services that they must purchase. The same applies to the foundation for pricing and other terms.

455. If a reference offer is published, all parties in the market have the opportunity to acquaint themselves in advance with the terms available. Furthermore, this ensures that undertakings will not be forced to pay for services and facilities they do not need. PTA is of the opinion that the publication of a reference offer for access to the system is a prerequisite for the entry of new operators into the market.

456. PTA considers it important to impose an obligation prohibiting Síminn from discriminating. In this context, it is necessary to impose an obligation concerning transparency as well, so as to ensure that the non-discrimination obligation is truly effective. This is done in order to prevent attempts to discriminate among customers.

457. On the basis of the transparency obligation, it is possible to require that Síminn publish a reference offer. PTA considers it necessary that Síminn publish a reference offer for call origination in the fixed-line network. The reference offer for call origination may be included in the reference offer for access in the form of call termination and call transit in the fixed network; cf. the current reference offer for interconnection. The more detailed the reference offer is, the simpler it is to ensure that non-discrimination is being practised. Síminn shall publish the reference offer in accordance with the instructions in this chapter within three months of the publication of the Administration's decision.

458. It is considered sufficient that Síminn publish the reference offer on its website. The reference offer shall be divided into independent units with the relevant terms and conditions, based on the needs of the market, so that the counterparty is not forced to agree to purchase services or products that are unnecessary. The reference offer shall be updated as needed and shall contain all of the information that is necessary with respect to the service offered. At a minimum, the published reference offer shall include information on the following:

- the interconnection service offered;
- the call origination price;
- the unit price and the service represented by each unit;
- all discounts and criteria for discounts;
- methods for calculating offers that are not at fixed prices;
- interconnection points;
- geographical areas where services are rendered;
- all significant limitations on delivery;
- all technological and physical characteristics, including interfaces used on interconnection points, as well as the standards in use;
- quality levels;
- customer maintenance;
- obligation to observe confidentiality between parties, confidentiality of data and plans, and protection of personal information;
- warranties and payment;
- unforeseen events and special circumstances;
- security and tapping;
- term of contractual agreement and termination of agreement;
- handling of matters of dispute;
- terms and conditions for fair compensation when it is not possible to provide the agreed quality level;
- other general contractual terms and conditions.

459. In other respects than those set forth in this section, the reference offer shall be in accordance with the Rules concerning Reference Offers for Interconnection, no. 94/2002.

460. If Síminn's reference offer is not considered sufficient for the market, PTA may require that it be amended in accordance with Article 29, Paragraph 2 of the Electronic Communications Act. Given the problems that have emerged in previous contractual negotiations with Síminn, PTA considers it appropriate to stipulate that Síminn may not demand a bank guarantee from electronic communications undertakings without special permission from PTA.

461. In order to enhance the credibility of wholesale prices, PTA considers it necessary that Síminn, in collaboration with PTA, make public the accounting information on the performance of its wholesale telephone services over the past year. PTA is of the opinion that such a requirement is authorised pursuant to Article 29, Paragraph 1 of the Electronic Communications Act.

462. PTA requires that Síminn inform other electronic communications undertakings of any price changes no later than two months before the changes are implemented. However, PTA considers it appropriate to maintain the notification periods that have been customary as regards interconnection areas and interconnection points, as both Síminn and Vodafone have pledged to announce changes in these criteria with six months' notice. Other changes are announced with three months' notice, in accordance with the companies' reference offers, and PTA considers it appropriate to continue this practise.

463. All electronic communications undertakings that conclude interconnection agreements, including agreements concerning call origination in fixed-line networks, are required to send PTA a copy of these agreements immediately, and no later than one week after they are signed; cf. Article 24, Paragraph 6 of the Electronic Communications Act.

464. Based on the authority in Article 29 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to observe transparency and to publish a reference offer, terms and conditions for supply and use, price lists, and accounting information for wholesale telephone services. Síminn is also required to notify PTA of all amendments to the agreements or reference offers concerned. Changes to reference offers shall not take effect until they have been approved by PTA. The information submitted must state explicitly the substance of the amendments and must indicate where in the agreement or reference offer changes have been made.

7.4.1.4 Accounting separation

465. If an obligation to practise non-discrimination is to be effective, it requires that Síminn be required to practise accounting separation so that it will be possible to confirm that the company complies with the requirement that it sell services to external customers at the same prices that it charges its own retail departments.

466. Accounting separation aids in identifying possible inadequacies in the market and revealing whether non-discrimination is practised in the market under scrutiny, or whether market proportions are distorted. These obligations promote enhanced transparency because they shed light both on wholesale prices and on internal transfer prices of the company's products and services. They also give PTA the opportunity to determine whether the non-discrimination obligations are being adhered to and to address problems related to price-based competition. PTA considers it necessary to impose an accounting separation obligation so as to assist the Administration in determining the level of compliance with existing rules, and it takes the view that this is necessary if the obligations concerning transparency and non-discrimination are to be effective.

467. Based on the authority in Article 31 of the Electronic Communications Act, PTA intends to impose an accounting separation obligation on Síminn. Such separation shall

involve, at a minimum, the separation of accounting for wholesale fixed-line telephone operations, on the one hand, and retail fixed-line operations, on the other, from other activities. Síminn's internal transfer prices at the wholesale level shall be transparent for the purpose of preventing unfair cross-subsidy, among other things. If Síminn's accounting separation should prove insufficient, PTA reserves the right to impose obligations for further separation at a later date.

468. Síminn shall, in its accounting, separate revenues, expenses, financial items, and capital for its telephone network. Síminn shall submit to PTA, on an annual basis, a specially itemised profit and loss account and balance sheet for its wholesale and retail operations, together with a summary of the division of indirect expenses that cannot be categorised through comparison with other expense items. The above-described summary for the prior year must be received by PTA by 1 April each year.

7.4.1.5 Price controls

469. Pursuant to Article 32 of the Electronic Communications Act, PTA may impose on an electronic communications undertaking obligations concerning cost orientation of prices, as well as 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 is discussed in the section on competition problems, PTA is of the opinion that Síminn could have the incentive to charge excessively high prices if the company were not subject to price controls.

470. With reference to Article 32 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation concerning price controls. It also intends to require that the company offer call origination in the fixed-line network at cost-oriented prices, including a suitable return on capital employed. Síminn shall prepare a cost model for calculation, no later than six months following the publication of the Administration's decision, using historical costs as a reference for its price lists. Based on the authority contained in the Electronic Communications Act, PTA will also use the operations of a comparable, efficiently run service as a guideline. Based on the results of the cost analysis and on comparison with prices in other EEA states, PTA will assess, on an annual basis, whether it is more suitable to use the LRIC⁸³ method than to use the historical cost method to determine the company's price lists.

Due to the fact that interconnection charges have dropped in the reference countries in recent years while Síminn's have remained stable, PTA intends not to authorise any increases in Síminn's interconnection prices under the current circumstances. Síminn is therefore prohibited from charging call origination prices higher than those appearing in the current price list: that is, ISK 0.68/connection, ISK 0.44/minute at the day rate, and ISK 0.26/minute at the evening, night, and weekend rate. Following the cost analysis described in the preceding paragraph, PTA will determine new prices.

⁸³ Long-run incremental costs.

7.4.1.6 Cost accounting

471. Cost accounting is necessary when an obligation concerning price controls has been imposed on an electronic communications undertaking with significant market power. In addition to imposing on Síminn an obligation concerning price controls, the Administration also intends to impose a cost accounting obligation on the company. The cost accounting obligation supports the obligations concerning cost-oriented prices, is necessary for the implementation of accounting separation, and could assist PTA in monitoring non-discrimination.

472. So that Síminn can demonstrate that its price list for a given type of service or product is based on costs, it is necessary to introduce cost accounting that includes, identifies, assesses, and allocates the appropriate costs to the pertinent services or products in accordance with recognised principles; that is, cause and effect.

473. No later than six months after the publication of the decision on the relevant market, Síminn shall submit to PTA a description of its cost accounting for call origination in the fixed-line network and shall publicise its principal expense categories, as well as the rules used to allocate costs. At the same time, Síminn shall submit to PTA a report from an independent auditor stating that there is consistency between the company's descriptions of cost allocations and the execution of its cost accounting system.

474. PTA is of the opinion that, without an obligation to maintain cost accounting, Síminn could price its services in the relevant market in excess of costs or could have an abnormally small difference between wholesale and retail prices, which could have a detrimental effect on competitors and users. Without the obligation to practice cost accounting, PTA could not ensure that prices will be based on costs and would therefore be unable to prevent problems of this sort.

475. Therefore, PTA intends to impose on Síminn an obligation to maintain cost accounting for call origination.

7.4.2 Assessment of the effects of obligations in Market 8

7.4.2.1 The necessity for the obligations

476. In accordance with the principle of proportionality, it is appropriate to assess the need for the obligations described above. The obligations are conducive to achieving the objectives set forth in the Electronic Communications Act, no. 81/2003, concerning effective competition and cost-efficient electronic communications. In view of the competition problems that exist in the market, Síminn's strong position on the relevant market and the position of the Síminn group in general, PTA considers it necessary to impose all of the above-mentioned obligations on Síminn in order to promote increased competition and safeguard consumer interests. PTA considers each of these obligations necessary, and in its examination of the relevant market, it has come to the conclusion that there are no other measures that could be as effective in resolving the competition problems in the market.

477. The obligation to grant wholesale access is a necessary premise for effective competition in the fixed-line telephone market. It is not possible to solve the competition

problems described above without imposing an obligation to grant access for call origination. Entry barriers prevent competitors from being able to build up an extensive fixed-line network; therefore, it is a prerequisite for effective competition that competitors be able to obtain access to Síminn's nationwide network.

478. The non-discrimination obligation is necessary to enable other undertakings to compete with Síminn in the markets for fixed-line services. The obligation should enable all electronic communications undertakings that purchase access from Síminn to receive comparable services, thus resolving the competition problem described above, which stems from Síminn's vertical integration.

479. In PTA's estimation, the publication of a reference offer is an extremely important element in promoting competition in the market for fixed-line services. It is necessary that undertakings considering entering the electronic communications market be able to evaluate the terms available for access to fixed-line services. The transparency obligation is also necessary in order to ensure compliance with the non-discrimination obligation.

480. PTA considers it necessary to require accounting separation because, among other things, accounting separation is a prerequisite for a satisfactory analysis of the cost of operating the fixed-line network. PTA does not consider it possible to use other, less stringent, methods if the cost analysis is to be based on historical costs. Furthermore, the obligation is necessary in order to ensure that Síminn practises non-discrimination with respect to the prices it charges its retail division, on the one hand, and unrelated companies, on the other.

481. PTA is of the opinion that the obligations concerning price controls and cost accounting are absolutely necessary, as Síminn has no incentive to offer appropriate prices on its own initiative because it is by far the largest operator in this market and, in some locations, the only operator that can offer fixed-line access and call origination. PTA considers that the price controls obligation will result in more efficient operation of the fixed-line network, which will ultimately result in lower prices charged to consumers.

7.4.2.2 The impact of the obligations

482. It is necessary to assess whether the burden represented by the obligations that PTA intends to impose on Síminn in the relevant market is justifiable in view of the objectives the obligations are meant to achieve. On the whole, the obligations that PTA intends to impose on Síminn represent some burden to the company. On the other hand, PTA considers the obligations to be consistent with the principle of proportionality and does not believe that they represent a greater burden than necessary. In many respects, the obligations are similar to those that have applied in the relevant market, but they include several elements that have been lacking. Furthermore, the content of each obligation is described in greater detail, and an attempt is made to ensure that the obligations are more transparent and goal-oriented than previous obligations have been.

483. As is discussed above, PTA considers it necessary to impose the discussed obligations on Síminn. Because other obligations are not better suited to achieving the set objectives, PTA considers, given the initial investment and the risk that was taken with that investment, that this is not an unreasonable requirement.

484. The obligation to grant access represents some burden for Síminn; however, it is a prerequisite for the introduction of effective competition in the markets. It is not possible to solve the competition problems described above without imposing an obligation to grant access. Síminn will have to incur some expense and inconvenience as a result of this obligation; however, the company will receive an appropriate price for the access granted, and the obligation could result in better utilisation of the equipment in which it has invested.

485. PTA does not consider the non-discrimination obligation especially onerous, as it is an appropriate requirement to make of a company such as Síminn, which has significant market power in many segments of the electronic communications market and belongs to the Síminn group.

486. The obligation to observe transparency, including the publication of a reference offer, involves some inconvenience for Síminn. It is necessary to bear in mind, however, that Síminn has already published such an offer and must now only update it to fulfil the requirements set forth here. The burden that this entails for Síminn is not overly onerous, however, in light of the fact that this obligation is necessary to promote competition.

487. PTA does not consider the obligation concerning accounting separation too onerous given the objective it is designed to achieve, as it is a normal part of modern business operations to separate production/operation costs for the various products or services that a company sells.

488. PTA believes the obligation concerning price controls is somewhat onerous, and that enforcing it will generate some expense for both Síminn and PTA. Although the obligation will generate some cost and inconvenience, PTA believes that it will not reduce Síminn's chance to earn an appropriate profit on the operation of its fixed-line networks and related infrastructure.

489. The obligations will not obstruct the build-up of fixed-line networks, as the price of call origination will be based on costs plus a reasonable return on capital employed. Therefore, price controls should not diminish the will to invest over the longer term.

490. In PTA's estimation, the above-described obligations are both appropriate and necessary in order to promote effective competition, and they should not prove unnecessarily onerous. PTA is of the opinion that these obligations are in the interest of long-term competition and are designed to increase the supply of services in the market for fixed-line services.

7.4.3 Market 9: Call termination on Síminn's fixed-line network

7.4.3.1 Obligation to grant access

491. Article 28, Paragraph 1 of the Electronic Communications Act states that 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.

492. In imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency, and sustainable competition. Article 28, Paragraph 3 of the Electronic Communications Act states that, in deciding to impose obligations pursuant to Paragraph 1, PTA shall consider whether it is:

- a. 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;
- b. feasible to provide the access proposed;
- c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
- d. to the advantage of competition in the longer term;
- e. inappropriate, in view of intellectual property rights;
- f. conducive to increasing the supply of services.

PTA has assessed whether the access requirement is technologically and financially realistic, and whether it would be realistic for a competitor to set up his own infrastructure in competition with Síminn, considering market developments and the nature of the access in question. With current technology, it is impossible for an operator to set up its own facilities for call termination in another operator's network. PTA considers it quite feasible for Síminn to grant the access that is proposed; furthermore, it considers it justifiable with respect to the initial investment. PTA considers the obligations conducive to long-term competition and increased supply of services.

493. There is no indication that any electronic communications undertaking has been denied reciprocal interconnection; however, there are known examples where interconnection agreements have taken an unnecessarily long time and negotiations have been difficult, due in large part, apparently, to inadequate flow of information. PTA considers it important that there be no delays in concluding interconnection agreements and that the undertakings involve not excuse themselves by blaming technological barriers. PTA intends to monitor the process so as to ascertain whether interconnection agreements in the fixed-line network are concluded within a reasonable time frame and whether the technological requirements made are fair. PTA intends to impose on Síminn the obligation to conclude interconnection agreements in the fixed-line network no later than three months after interconnection is requested so as to prevent new electronic communications undertakings from having to tolerate entry barriers in the form of delayed negotiations for interconnection. If contractual negotiations are unsuccessful, either party may request that PTA decide whether an interconnection agreement shall be concluded, and on what terms.

494. Síminn has been defined as an undertaking with significant market power in the market for call termination in the fixed-line network; therefore, it is required to comply with reasonable requests for interconnection, including call termination.

495. PTA intends to impose on Síminn the obligation to conclude agreements for call termination without inappropriate delays so as to reduce the likelihood of deliberate postponement of interconnection requests. Síminn shall be required to document the amount of time that contractual negotiations take, the progress of the negotiations, and the reasons for

delays, if any should arise. These documents shall be made available to the counterparty and to PTA upon request. If Síminn refuses a request for access, it shall provide the undertaking concerned with a documented, grounded reason for its refusal. The document explaining the rejection shall contain all of the information necessary to evaluate the grounds for the refusal.

496. Based on the authority in Article 28 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to respond to reasonable and appropriate requests for call termination in its fixed-line network and for wholesale call termination services. If Síminn rejects a request for access or does not reply to a request within 14 days, it shall provide the applicant a reasoned written response explaining the rejection. In all instances, interconnection agreements for call termination in the fixed-line network shall be concluded within three months of the date the request, including the required information as set forth in the reference offer, is received by Síminn.

7.4.3.2 Non-discrimination

497. Pursuant to Article 30 of the Electronic Communications Act, PTA may impose on electronic communications undertakings with significant market power the obligation to practise non-discrimination in approving requests for interconnection or access. Such obligations should ensure, in particular, that an electronic communications undertaking applies equivalent conditions in equivalent circumstances to other undertakings offering electronic communications services, and that it provides services and information to others on the same terms and of the same quality as those it provides to its own service departments, subsidiaries, or partners.

498. If an obligation concerning non-discrimination is not imposed, telephone service providers' significant market power in the market for call termination and a shortage of potential substitute services can lead to a situation where the company concerned discriminates against parties that need the service. In particular, an undertaking could have an incentive to sell call origination to unrelated parties at higher prices than it charges its own departments. Such measures could prove damaging to competition and could harm consumers who must pay too high a fee for telephone calls between networks.

499. Even though companies have been guaranteed interconnection at a cost-oriented price, an operator with SMP could attempt to discriminate on premises other than price and thus raise the competitor's expenses in order to drive him out of the market. These could include poor dissemination of information, discrimination in quality of service, and undue requirements in negotiation. Fair, moderate, and reasonable requirements for access, including prices, are a fundamental element in the attempt to promote competition. In the opinion of PTA, the non-discrimination obligation is well designed to mitigate the problems that arise from discrimination with regard to both price and other factors. PTA is of the opinion that the non-discrimination requirement is both fair and appropriate. It cannot be seen that this requirement involves great expense or disadvantage for Síminn. The non-discrimination obligation does not mean that all companies must operate under exactly the same terms; instead, all differences in terms shall be based on objective considerations.

500. Based on the authority contained in Article 30 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation to practise non-discrimination concerning price and other elements, both with respect to external customers and with respect to internal

vs. external customers. The department concerned shall disseminate information to unrelated parties in a manner comparable to that used to disseminate information to the company's own departments or to related parties. Information that Síminn gathers in the preparation of contractual agreements for call termination shall be handled in a manner consistent with the provisions contained in Article 26 of the Electronic Communications Act.

7.4.3.3 Transparency

501. Article 29, Paragraph 1 of the Electronic Communications Act authorises PTA to require that an electronic communications undertaking with significant market power make public specified information in order to increase the level of transparency related to interconnection or access to electronic communications infrastructure; e.g., accounting information, technical specifications, information on network characteristics, terms and conditions for supply and use, and price lists. It is permissible to grant exemptions from the requirement to make information public if the electronic communications undertaking can demonstrate that such publication involves important financial or commercial interests that it is reasonable and appropriate to keep secret.

502. Article 29, Paragraph 2 of the same Act states that when an electronic communications undertaking operates under an obligation of non-discrimination, PTA may require the undertaking to publish a reference offer, including an itemised description of the interconnection or access, together with terms and conditions, including prices. PTA may require amendments to reference offers and is authorised to set rules concerning their content.

503. On the basis of the transparency obligation, it is possible to require that Síminn publish a reference offer. PTA considers it necessary that Síminn publish a reference offer for call termination. The reference offer for call termination may be included in the reference offer for access in the form of call origination and call transit in the fixed network; cf. the current reference offer for interconnection.

504. It is considered sufficient that Síminn publish the reference offer on its website. The reference offer shall be divided into independent units with the relevant terms and conditions, based on the needs of the market, so that the counterparty is not forced to agree to purchase services or products that are unnecessary. The reference offer shall be updated as needed and shall contain all of the information that is necessary with respect to the service offered. At a minimum, the published reference offer shall include information on the following:

- the interconnection service offered;
- the price for call termination;
- the unit price and the service represented by each unit;
- all discounts and criteria for discounts;
- methods for calculating offers that are not at fixed prices;
- interconnection points;
- geographical areas where services are rendered;
- all significant limitations on delivery;
- all technological and physical characteristics, including interfaces used on interconnection points, as well as the standards in use;
- quality levels;

- customer maintenance;
- the obligation to observe confidentiality between parties, confidentiality of data and plans, and protection of personal information;
- warranties and payment;
- unforeseen events and special circumstances;
- security and tapping;
- term of contractual agreement and termination of agreement;
- handling of matters of dispute;
- terms and conditions for fair compensation when it is not possible to provide the agreed quality level;
- other general contractual terms and conditions.

In other respects than those set forth in this section, the reference offer shall be in accordance with the Rules concerning Reference Offers for Interconnection, no. 94/2002.

505. If Síminn's reference offer is not considered sufficient for the market, PTA may require that it be amended in accordance with Article 29, Paragraph 2 of the Electronic Communications Act. Given the problems that have emerged in previous contractual negotiations with Síminn, PTA considers it appropriate to stipulate that Síminn may not demand a bank guarantee from electronic communications undertakings without special permission from PTA.

506. In order to enhance the credibility of wholesale prices, PTA considers it necessary that Síminn, in collaboration with PTA, make public the accounting information on the performance of its wholesale telephone services over the past year. PTA is of the opinion that such a requirement is authorised pursuant to Article 29, Paragraph 1 of the Electronic Communications Act.

PTA requires that Síminn inform other electronic communications undertakings of any price changes no later than two months before the changes are implemented. However, PTA considers it appropriate to maintain the notification periods that have been customary as regards interconnection areas and interconnection points, as both Síminn and Vodafone have pledged to announce changes in these criteria with six months' notice. Other changes are announced with three months' notice, in accordance with the companies' reference offers, and PTA considers it appropriate to continue this practise.

507. All electronic communications undertakings that conclude interconnection agreements, including agreements concerning call origination in fixed-line networks, are required to send PTA a copy of these agreements immediately, and no later than one week after they are signed; cf. Article 24, Paragraph 6 of the Electronic Communications Act. .

508. Based on the authority in Article 29 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to observe transparency and to publish a reference offer, terms and conditions for supply and use, price lists, and accounting information for wholesale telephone services. Síminn is also required to notify PTA of all amendments to the agreements or reference offers concerned. Changes to reference offers shall not take effect until they have been approved by PTA. The information submitted must state explicitly the substance of the amendments and must indicate where in the agreement or reference offer changes have been made.

7.4.3.4 Accounting separation

509. If an obligation to practise non-discrimination is to be effective, it requires that Síminn be required to practise accounting separation so that it will be possible to confirm that the company complies with the requirement that it sell services to external customers at the same prices that it charges its own retail departments.

510. Accounting separation aids in identifying possible inadequacies in the market and revealing whether non-discrimination is practised in the market under scrutiny, or whether market proportions are distorted. These obligations promote enhanced transparency because they shed light both on wholesale prices and on internal transfer prices of the company's products and services. They also give PTA the opportunity to determine whether the non-discrimination obligations are being adhered to and to address problems related to price-based competition. PTA considers it necessary to impose an accounting separation obligation so as to assist the Administration in determining the level of compliance with existing rules, and it takes the view that this is necessary if the obligations concerning transparency and non-discrimination are to be effective.

511. Based on the authority in Article 31 of the Electronic Communications Act, PTA intends to impose an accounting separation obligation on Síminn. Such separation shall involve, at a minimum, the separation of accounting for wholesale fixed-line telephone operations, on the one hand, and retail fixed-line operations, on the other, from other activities. Síminn's internal transfer prices at the wholesale level shall be transparent for the purpose of preventing unfair cross-subsidy, among other things. If Síminn's accounting separation should prove insufficient, PTA reserves the right to impose obligations for further separation at a later date.

512. Síminn shall, in its accounting, separate revenues, expenses, financial items, and capital for its telephone network. Síminn shall submit to PTA, on an annual basis, a specially itemised profit and loss account and balance sheet for its wholesale and retail operations, together with a summary of the division of indirect expenses that cannot be categorised through comparison with other expense items. The above-described summary for the prior year must be received by PTA by 1 April each year.

7.4.3.5 Price controls

513. Pursuant to Article 32, Paragraph 1 of the Electronic Communications Act, PTA may impose on an electronic communications undertaking obligations concerning cost orientation of prices, as well as 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 is discussed in the section on competition problems, PTA is of the opinion that Síminn could have the incentive to charge excessively high prices if the company were not subject to price controls.

514. With reference to Article 32 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation concerning price controls. It also intends to require that the company offer call termination in the fixed-line network at cost-oriented prices, including a

suitable return on capital employed. Síminn shall prepare a cost model for calculation, no later than six months following the publication of the Administration's decision, using historical costs as a reference for its price lists. Based on the authority contained in the Electronic Communications Act, PTA will also use the operations of a comparable, efficiently run service as a guideline. Based on the results of the cost analysis and on comparison with prices in other EEA states, PTA will assess, on an annual basis, whether it is more suitable to use the LRIC⁸⁴ method than to use the historical cost method to determine the company's price lists.

515. Due to the fact that interconnection charges have dropped in the reference countries in recent years while Síminn's have remained stable, PTA intends not to authorise any increases in Síminn's interconnection prices under the current circumstances. Síminn is therefore prohibited from charging call termination prices higher than those appearing in the current price list: that is, ISK 0.68/connection, ISK 0.44/minute at the day rate, and ISK 0.26/minute at the evening, night, and weekend rate. Following the cost analysis described in the preceding paragraph, PTA will determine new prices.

7.4.3.6 Cost accounting

516. Cost accounting is necessary when an obligation concerning price controls has been imposed on an electronic communications undertaking with significant market power. In addition to imposing on Síminn an obligation concerning price controls, the Administration also intends to impose a cost accounting obligation on the company. The cost accounting obligation supports the obligations concerning cost-oriented prices, is necessary for the implementation of accounting separation, and could assist PTA in monitoring non-discrimination.

517. So that Síminn can demonstrate that its price list for a given type of service or product is based on costs, it is necessary to introduce cost accounting that includes, identifies, assesses, and allocates the appropriate costs to the pertinent services or products in accordance with recognised principles; that is, cause and effect.

518. No later than six months after the publication of the decision on the relevant market, Síminn shall submit to PTA a description of its cost accounting for call origination in the fixed-line network and shall publicise its principal expense categories, as well as the rules used to allocate costs. At the same time, Síminn shall submit to PTA a report from an independent auditor stating that there is consistency between the company's descriptions of cost allocations and the execution of its cost accounting system.

519. PTA is of the opinion that, without an obligation to maintain cost accounting, Síminn could price its services in the relevant market in excess of costs or could have an abnormally small difference between wholesale and retail prices, which could have a detrimental effect on competitors and users. Without the obligation to practice cost accounting, PTA could not ensure that prices will be based on costs and would therefore be unable to prevent problems of this sort.

520. Therefore, PTA intends to impose on Síminn an obligation to maintain cost accounting for call termination.

⁸⁴ Long-run incremental costs.

7.4.4 Assessment of the effects of obligations imposed on Síminn in Market 9

7.4.4.1 The necessity for the obligations

521. In accordance with the principle of proportionality, it is appropriate to assess the need for the obligations described above. The obligations are conducive to achieving the objectives set forth in the Electronic Communications Act, no. 81/2003, concerning effective competition and cost-efficient electronic communications. In view of the competition problems that exist in the market, Síminn's strong position on the relevant market and the position of the Síminn group in general, PTA considers it necessary to impose all of the above-mentioned obligations on Síminn in order to promote increased competition and safeguard consumer interests. PTA considers each of these obligations necessary, and in its examination of the relevant market, it has come to the conclusion that there are no other measures that could be as effective in resolving the competition problems in the market.

522. The obligation to grant wholesale access to call termination is a necessary premise for effective competition in the fixed-line telephone market. It is not possible to solve the competition problems described above without imposing an obligation to grant access to call termination.

523. The non-discrimination obligation is necessary to enable other undertakings to compete with Síminn in the markets for fixed-line services. As a result of the obligation, all electronic communications undertakings that purchase call termination from Síminn should receive comparable services and be charged prices comparable to those Síminn charges its own departments, thus solving the competition problems related to these factors.

524. In PTA's estimation, the publication of a reference offer is an extremely important element in promoting competition in the market for fixed-line services. It is necessary that undertakings considering entering the electronic communications market be able to evaluate the terms available for access to call termination in the fixed-line network. The transparency obligation is also necessary in order to ensure compliance with the non-discrimination obligation.

525. PTA considers it necessary to require accounting separation because, among other things, accounting separation is a prerequisite for a satisfactory analysis of the cost of operating the fixed-line network. PTA does not consider it possible to use other, less stringent, methods if the cost analysis is to be based on historical costs. Furthermore, the obligation is necessary in order to ensure that Síminn practises non-discrimination with respect to the prices it charges its retail division, on the one hand, and unrelated companies, on the other.

526. PTA is of the opinion that the price controls obligation is absolutely necessary, as Síminn has no incentive to offer appropriate prices on its own initiative because it is by far the largest operator in this market. PTA considers that the price controls obligation will result in more efficient operation of the fixed-line network, which will ultimately result in lower prices charged to consumers.

7.4.4.2 The impact of the obligations

527. It is necessary to assess whether the burden represented by the obligations that PTA intends to impose on Síminn in the relevant market is justifiable in view of the objectives the

obligations are meant to achieve. On the whole, the obligations that PTA intends to impose on Síminn represent some burden to the company. On the other hand, PTA considers the obligations to be consistent with the principle of proportionality and does not believe that they represent a greater burden than necessary. In many respects, the obligations are similar to those that have applied in the relevant market, but they include several elements that have been lacking. Furthermore, the content of each obligation is described in greater detail, and an attempt is made to ensure that the obligations are more transparent and goal-oriented than previous obligations have been.

528. As is discussed above, PTA considers it necessary to impose the discussed obligations on Síminn. Because other obligations are not better suited to achieving the set objectives, PTA considers, given the initial investment and the risk that was taken with that investment, that this is not an unreasonable requirement.

529. The obligation to grant access represents some burden for Síminn; however, it is a prerequisite for the introduction of effective competition in the markets. It is not possible to solve the competition problems described above without imposing an obligation to grant access. Síminn will have to incur some expense and inconvenience as a result of this obligation; however, the company will receive an appropriate price for the access granted, and the obligation could result in better utilisation of the equipment in which it has invested.

530. PTA does not consider the non-discrimination obligation especially onerous, as it is an appropriate requirement to make of a company such as Síminn, which has significant market power in many segments of the electronic communications market and belongs to the Síminn group.

531. The obligation to observe transparency, including the publication of a reference offer, involves some inconvenience for Síminn. It is necessary to bear in mind, however, that Síminn has already published such an offer and must now only update it to fulfil the requirements set forth here. The burden that this entails for Síminn is not overly onerous, however, in light of the fact that this obligation is necessary to promote competition.

532. PTA does not consider the obligation concerning accounting separation too onerous given the objective it is designed to achieve, as it is a normal part of modern business operations to separate production/operation costs for the various products or services that a company sells.

533. PTA believes the obligation concerning price controls is somewhat onerous, and that enforcing it will generate some expense for both Síminn and PTA. Although the obligation will generate some cost and inconvenience, PTA believes that it will not reduce Síminn's chance to earn an appropriate profit on the operation of its fixed-line networks and related infrastructure.

534. The obligations will not obstruct the build-up of fixed-line networks, as the price of call termination will be based on costs plus a reasonable return on capital employed. Therefore, price controls should not diminish the will to invest over the longer term.

535. In PTA's estimation, the above-described obligations are both appropriate and necessary in order to promote effective competition, and they should not prove unnecessarily onerous. PTA is of the opinion that these obligations are in the interest of long-term

competition and are designed to increase the supply of services in the market for fixed-line services and the electronic communications market as a whole.

7.4.5 Market 9: Call termination in fixed-line networks of service providers other than Síminn

7.4.5.1 Obligation to grant access

Because Vodafone, as well as Síminn, has been designated as having significant market power in the market under scrutiny, PTA intends to impose on the company the obligation to comply with reasonable requests for interconnection in the form of call termination.

536. In imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency, and sustainable competition. Article 28, Paragraph 3 of the Electronic Communications Act states that, in deciding to impose obligations pursuant to Paragraph 1, PTA shall consider whether it is:

- a. 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;
- b. feasible to provide the access proposed;
- c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
- d. to the advantage of competition in the longer term;
- e. inappropriate, in view of intellectual property rights;
- f. conducive to increasing the supply of services.

PTA has assessed whether the access requirement is technologically and financially realistic, and whether it would be realistic for a competitor to set up his own infrastructure in competition with Síminn, considering market developments and the nature of the access in question. With current technology, it is impossible for an operator to set up its own facilities for call termination in another operator's network. PTA considers it quite feasible for Vodafone to grant the access that is proposed; furthermore, it considers it justifiable with respect to the initial investment. PTA considers the obligations conducive to long-term competition and increased supply of services.

537. The company is required to conclude agreements for call termination without inappropriate delays so as to reduce the likelihood of deliberate postponement of interconnection requests. PTA intends to impose on the company the obligation to conclude interconnection agreements in the fixed-line network no later than three months after interconnection is requested.

538. If Vodafone refuses a request for access, it shall provide the undertaking concerned with a documented, grounded reason for its refusal. The document explaining the rejection shall contain all of the information necessary to evaluate the grounds for the refusal.

7.4.5.2 Non-discrimination

539. Pursuant to Article 30 of the Electronic Communications Act, PTA may impose on electronic communications undertakings with significant market power the obligation to practise non-discrimination in approving requests for interconnection or access. Such obligations should ensure, in particular, that an electronic communications undertaking applies equivalent conditions in equivalent circumstances to other undertakings offering electronic communications services, and that it provides services and information to others on the same terms and of the same quality as those it provides to its own service departments, subsidiaries, or partners.

540. If an obligation concerning non-discrimination is not imposed, telephone service providers' significant market power in the market for call termination and a shortage of potential substitute services can lead to a situation where the company concerned discriminates against parties that need the service. In particular, an undertaking could have an incentive to sell call termination to unrelated parties at higher prices than it charges its own departments. Such measures could prove damaging to competition and could harm consumers who must pay too high a fee for telephone calls between networks.

541. Even though companies have been guaranteed interconnection at a cost-oriented price, an operator with SMP could attempt to discriminate on premises other than price and thus raise the competitor's expenses in order to drive him out of the market. These could include poor dissemination of information, discrimination in quality of service, and undue requirements in negotiation. Fair, moderate, and reasonable requirements for access, including prices, are a fundamental element in the attempt to promote competition. In the opinion of PTA, the non-discrimination obligation is well designed to mitigate the problems that arise from discrimination with regard to both price and other factors. PTA is of the opinion that the non-discrimination requirement is both fair and appropriate. It cannot be seen that this requirement involves great expense or disadvantage for Síminn. The non-discrimination obligation does not mean that all companies must operate under exactly the same terms; instead, all differences in terms shall be based on objective considerations.

542. Based on the authority contained in Article 30 of the Electronic Communications Act, PTA intends to impose on Vodafone an obligation to practise non-discrimination concerning price and other elements, both with respect to external customers and with respect to internal vs. external customers. The department concerned shall disseminate information to unrelated parties in a manner comparable to that used to disseminate information to the company's own departments or to related parties. Information that Vodafone obtains in the preparation of contractual agreements for call termination shall be handled in a manner consistent with the provisions contained in Article 26 of the Electronic Communications Act.

7.4.5.3 Transparency

543. Article 29, Paragraph 1 of the Electronic Communications Act authorises PTA to require that an electronic communications undertaking with significant market power make public specified information in order to increase the level of transparency related to interconnection or access to electronic communications infrastructure; e.g., accounting information, technical specifications, information on network characteristics, terms and conditions for supply and use, and price lists. It is permissible to grant exemptions from the

requirement to make information public if the electronic communications undertaking can demonstrate that such publication involves important financial or commercial interests that it is reasonable and appropriate to keep secret.

544. PTA considers it appropriate that providers of call termination services in the fixed-line network other than Síminn – that is, Vodafone – make public a price list that includes all prices for call termination in the fixed-line network, as well as for related services. The price list shall be published on the service provider’s website, together with all criteria for the prices. The phrase “criteria for prices” refers to criteria such as units of measure on which prices are based; for example, minutes, number of calls, and carrying capacity of currents. It is also necessary to give account of billing periods, discount offers (if any), and other factors that affect the amount charged.

545. Furthermore, Vodafone shall publish information on the location and technological characteristics of interconnection points.

546. PTA intends to impose on Vodafone the obligation to notify undertakings of price changes no later than two months before the changes take effect. However, PTA considers it appropriate to maintain the notification periods that have been customary as regards interconnection areas and interconnection points, as both Síminn and Vodafone have pledged to announce changes in these criteria with six months’ notice. Other changes are announced with three months’ notice, in accordance with the companies’ reference offers, and PTA considers it appropriate to continue this practise.

547. In order to enhance the credibility of wholesale prices, PTA considers it necessary that Vodafone, in collaboration with PTA, make public the accounting information on the performance of its wholesale telephone services over the past year. PTA is of the opinion that such a requirement is authorised pursuant to Article 29, Paragraph 1 of the Electronic Communications Act.

548. All electronic communications undertakings that conclude interconnection agreements, including agreements concerning call origination in fixed-line networks, are required to send PTA a copy of these agreements immediately, and no later than one week after they are signed; cf. Article 24, Paragraph 6 of the Electronic Communications Act. Furthermore, Vodafone shall notify PTA of all amendments to interconnection agreements, price lists, or general terms and conditions for interconnection. Changes to price lists and general terms and conditions shall not take effect until they have been approved by PTA. The information submitted must state explicitly the substance of the changes and must indicate where they have been made.

7.4.5.4 Price controls

549. As is discussed in the section on competition problems, PTA is of the opinion that Vodafone could have the incentive to charge excessively high prices if the company is not subject to price controls. Based on the authority contained in Article 32 of the Electronic Communications Act, PTA intends to impose on Vodafone the obligation to charge fair termination prices. Their price lists shall be based on Síminn’s price list, so that their termination prices may never be higher than those charged by Síminn, although they may be lower. In PTA’s estimation, it is fair to offer Vodafone an adaptation period so as to enable

the company to reduce its termination prices to a level comparable to those charged by Síminn. PTA takes the view that four years is a satisfactory adaptation period. This is also consistent with the position taken by ERG.⁸⁵ Therefore, all current fixed-line networks should either charge the same termination fee four years after the publication of the decision on the relevant market, or Vodafone's prices should be lower than Síminn's. PTA therefore proposes that Vodafone reduce its termination charges annually, in four equal increments, following the publication of the decision. The price reductions set forth are minimum reductions, and the company are free to lower its prices more, and faster, than is provided for here.

Table 7-1 Reductions of call termination prices in Vodafone's fixed-line networks

	Day rate ISK/min	Evening/night/ weekend rate ISK/min	Connection fee ISK/connection
Síminn's price in March 2008	0.44	0.26	0.68
Vodafone's price in March 2008	0.66	0.44	0.99
Vodafone's price 1 years after publication of decision	0.61	0.40	0.91
Vodafone's price 2 years after publication of decision	0.55	0.35	0.84
Vodafone's price 3 years after publication of decision	0.50	0.31	0.76
Vodafone's price 4 years after publication of decision	0.44	0.26	0.68

If a cost analysis is carried out on Síminn's prices at a later time and Síminn's prices are revised upwards or downwards as a result, Vodafone's prices shall be revised accordingly.

7.4.6 Assessment of the effects of obligations in Market 9: Vodafone

7.4.6.1 The necessity for the obligations

550. In accordance with the principle of proportionality, it is appropriate to assess the need for the obligations described above. The obligations are conducive to achieving the objectives set forth in the Electronic Communications Act, no. 81/2003, concerning effective competition and cost-efficient electronic communications. In view of the existing competition problems and the strong position of Vodafone with respect to call termination in its own networks, PTA considers it necessary to impose the above-described obligations on the company so as to promote increased competition and safeguard the interests of consumers.

551. The obligation to grant wholesale access to call termination is a necessary premise for effective competition in the fixed-line telephone market. It is not possible to solve the

⁸⁵ In the ERG common position on termination prices, it is considered desirable that regulatory authorities impose obligations that equalise termination charges among individual networks. See: ERG's Common Position on symmetry of fixed call termination rates and symmetry of mobile call termination rates - ERG (07) 83 final 080312, http://erg.eu.int/doc/publications/erg_07_83_mtr_ftr_cp_12_03_08.pdf

competition problems described above without imposing an obligation to grant access to call termination.

552. In PTA's estimation, the publication of price information is an extremely important element in promoting competition in the market for fixed-line services. It is necessary that undertakings considering entering the electronic communications market be able to evaluate the terms available for access to call termination.

553. The obligation to practise non-discrimination with regard to access to wholesale call termination is necessary so that electronic communications undertakings can compete on an equal footing in the markets for fixed-line services. As a result of the obligation, all electronic communications undertakings that purchase termination from other electronic communications undertakings should receive comparable services and pay prices comparable to those the seller charges its own departments. This will solve the competition problems in the relevant markets.

554. PTA is of the opinion that the price controls obligation is absolutely necessary, as Vodafone has no incentive to offer appropriate prices on its own initiative. PTA considers that the price controls obligation will result in more efficient operation of the fixed-line network, which will ultimately result in lower prices charged to consumers. The above-mentioned ERG report⁸⁶ recommends reciprocity in termination pricing in fixed-line networks. One reason that asymmetrical termination pricing has been abandoned is the fact that revenues from call termination are far less important to electronic communications undertakings today than they were previously, because service providers can use the same electronic communications network to offer various other services, such as television and internet, as well as voice call services. Furthermore, the alleged advantage that economy of scale is considered to give to large, established electronic communications undertakings is not as clearly discernible in the provision of voice call services as it is in the provision of mobile phone services. Unlike mobile phone service providers, providers of voice call services need not be concerned about the coverage of their networks; neither do they need to use specified technological solutions. Furthermore, they need not incur sunk costs such as, for example, frequency fees. Reciprocal (symmetric) termination charges also save the business expense that would otherwise be incurred as a result of complex and protracted contractual negotiations concerning access and termination prices. They also save various types of administrative expense that would otherwise be incurred by the regulatory authorities as a result of monitoring the prices of numerous service providers, and fewer disputes are referred to rulings committees and the court system. Finally, it is necessary to bear in mind the inefficiency represented by the current settlement arrangements for voice call services, where termination fees are paid by the customers of the electronic communications undertaking that carries out call origination and not by the customers of the electronic communications undertaking that handles call termination. For this reason, there is a tendency to charge high termination prices, which raises competitors' expenses. Service providers have little incentive to minimise costs and termination charges, as such costs are paid by competitors' customers. Therefore, a service provider whose operations are inefficiently run benefits of the efficiency and cost-control of a better-managed electronic communications undertaking. The above arguments show clearly the importance of basing all currently operating telephone service providers' termination fees on the cost-oriented price charged by Síminn. However, it is appropriate to give Vodafone a specified length of time to adapt its prices to Síminn's prices, and as is stated in the cited ERG

⁸⁶ ERG Common position on symmetry of fixed call termination rates and symmetry of mobile call termination rates (ERG(07)83 final), dated 12 March 2008. See pp: 39-40.

report, four years is considered a suitable adaptation period.

7.4.6.2 The impact of the obligations

555. It is necessary to assess whether the burden represented by the obligations that PTA intends to impose on Vodafone in the relevant market is justifiable in view of the objectives the obligations are meant to achieve. On the whole, the obligations that PTA intends to impose on the company represent some burden to it. On the other hand, PTA considers the obligations to be consistent with the principle of proportionality and does not believe that they represent a greater burden than necessary.

556. As is discussed above, PTA considers it necessary to impose the discussed obligations on Vodafone. Because other obligations are not better suited to achieving the set objectives, PTA considers, given the initial investment and the risk that was taken with that investment, that this is not an unreasonable requirement.

557. The obligation to grant access is actually not a burden for Vodafone because it is necessary for the company to connect to other networks in order to provide its own customers satisfactory service. The obligation to grant access is a prerequisite for the introduction of effective competition in the markets. It is not possible to solve the competition problems described above without imposing an obligation to grant access.

558. In PTA's estimation, the non-discrimination obligation is not especially onerous for Vodafone, as it is an appropriate requirement to make of an undertaking that has significant market power in the relevant market and has a monopoly on termination in its own fixed networks.

559. The transparency obligation, including the obligation to publish pricing information, represents some inconvenience for Vodafone. The burden that this entails for the company is not overly onerous, however, in light of the fact that this obligation is necessary to promote competition.

560. PTA is of the opinion that the price controls obligation is somewhat burdensome and will generate expenses for Vodafone. Although the obligation will generate some cost and inconvenience, PTA believes that it will not reduce the company's chance to earn an appropriate profit on the operation of its fixed-line networks and related infrastructure. In order to reduce the burden represented by this obligation, the companies are granted a four-year adaptation period.

561. In PTA's estimation, the above-described obligations are both appropriate and necessary in order to promote effective competition, and they should not prove unnecessarily onerous. PTA is of the opinion that these obligations are in the interest of long-term competition and are designed to increase the supply of services in the market for fixed-line services and the electronic communications market as a whole.

7.4.7 Market 10: Transit services in fixed networks

7.4.7.1 Obligation to grant access

562. Article 28, Paragraph 1 of the Electronic Communications Act states that 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.

563. In imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency, and sustainable competition. Article 28, Paragraph 3 of the Electronic Communications Act states that, in deciding to impose obligations pursuant to Paragraph 1, PTA shall consider whether it is:

- a. 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;
- b. feasible to provide the access proposed;
- c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
- d. to the advantage of competition in the longer term;
- e. inappropriate, in view of intellectual property rights;
- f. conducive to increasing the supply of services.

PTA has assessed whether the access requirement is technologically and financially realistic, and whether it would be realistic for a competitor to set up his own infrastructure in competition with Síminn, considering market developments and the nature of the access in question. PTA considers it quite feasible for Síminn to grant the access that is proposed; furthermore, it considers it justifiable with respect to the initial investment. PTA considers the obligations conducive to long-term competition and increased supply of services.

564. There is no indication that any electronic communications undertaking has been denied interconnection; however, there are known examples where interconnection agreements have taken an unnecessarily long time and negotiations have been difficult, due in large part, apparently, to inadequate flow of information. PTA considers it important that there be no delays in concluding interconnection agreements and that the undertakings involve not excuse themselves by blaming technological barriers. PTA intends to monitor the process so as to ascertain whether interconnection agreements in the fixed-line network are concluded within a reasonable time frame and whether the technological requirements made are fair. PTA intends to impose on Síminn the obligation to conclude interconnection agreements in the fixed-line network no later than three months after interconnection is requested so as to prevent new electronic communications undertakings from having to tolerate entry barriers in the form of delayed negotiations for interconnection. If contractual negotiations are unsuccessful, either party may request that PTA decide whether an interconnection agreement shall be concluded, and on what terms.

565. Síminn has been defined as an undertaking with significant market power in the market for call transit in the fixed-line network; therefore, it is required to comply with reasonable requests for interconnection, including call transit. PTA intends to impose on Síminn the obligation to conclude agreements for call transit without inappropriate delays so as to reduce the likelihood of deliberate postponement of interconnection requests. Síminn shall be required to document the amount of time that contractual negotiations take, the progress of the negotiations, and the reasons for delays, if any should arise. These documents shall be made available to the counterparty and to PTA upon request. If Síminn refuses a request for access, it shall provide the undertaking concerned with a documented, grounded reason for its refusal. The document explaining the rejection shall contain all of the information necessary to evaluate the grounds for the refusal.

566. PTA considers it appropriate that Síminn comply with reasonable requests for cascade billing at either wholesale or retail level in connection with transit services.

567. With reference to Article 28 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to comply with appropriate and reasonable requests for call transit services in the fixed-line network and for accompanying billing, if necessary. If Síminn rejects a request for access or does not reply to a request within 14 days, it shall provide the applicant a reasoned written response explaining the rejection. In all instances, interconnection agreements for call transit in the fixed-line network shall be concluded within three months of the date the request, including the required information as set forth in the reference offer, is received by Síminn.

7.4.7.2 Non-discrimination

568. Pursuant to Article 30 of the Electronic Communications Act, PTA may impose on electronic communications undertakings with significant market power the obligation to practise non-discrimination in approving requests for interconnection or access. Such obligations should ensure, in particular, that an electronic communications undertaking applies equivalent conditions in equivalent circumstances to other undertakings offering electronic communications services, and that it provides services and information to others on the same terms and of the same quality as those it provides to its own service departments, subsidiaries, or partners.

569. If an obligation concerning non-discrimination is not imposed, service providers' significant market power in the market for call transit and a shortage of potential substitute services can lead to a situation where the company concerned discriminates against parties that need the service. They could, in particular, have an incentive to sell transit services to unrelated parties at a higher price than they charge their own departments. Such measures could prove damaging to competition and could harm consumers who must pay too high a fee for telephone calls between networks. In view of this, PTA considers it appropriate to stipulate that non-discrimination be practised with respect to prices and other terms for call transit services.

570. Based on the authority contained in Article 30 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation to practise non-discrimination with respect to price and other criteria. The non-discrimination obligation shall apply with respect to external customers and with respect to internal vs. external customers, as is provided for in Article 30

of the Electronic Communications Act. Information that Síminn gathers in the preparation of contractual agreements for access shall be handled in a manner consistent with the provisions contained in Article 26 of the Electronic Communications Act.

7.4.7.3 Transparency

571. Article 29, Paragraph 1 of the Electronic Communications Act authorises PTA to require that an electronic communications undertaking with significant market power make public specified information in order to increase the level of transparency related to interconnection or access to electronic communications infrastructure; e.g., accounting information, technical specifications, information on network characteristics, terms and conditions for supply and use, and price lists. It is permissible to grant exemptions from the requirement to make information public if the electronic communications undertaking can demonstrate that such publication involves important financial or commercial interests that it is reasonable and appropriate to keep secret.

572. Article 29, Paragraph 2 of the same Act states that when an electronic communications undertaking is required to practise non-discrimination, PTA may require that it publish a reference offer that includes an itemised description of the interconnection or access, together with terms and conditions, including price lists. PTA may require amendments to reference offers and is authorised to set rules concerning their content.

573. PTA considers it appropriate that Síminn prepare and publish a reference offer for call transit services in the fixed-line network. The reference offer for call transit services may be included in the reference offer for access in the form of call origination and call termination in the fixed network; cf. the current reference offer for interconnection.

574. It is considered sufficient that Síminn publish the reference offer on its website. The reference offer shall be divided into independent units with the relevant terms and conditions, based on the needs of the market, so that the counterparty is not forced to agree to purchase services or products that are unnecessary. The reference offer shall be updated as needed and shall contain all of the information that is necessary with respect to the service offered. At a minimum, the published reference offer shall include information on the following:

- the interconnection service offered;
- the price for call transit;
- the unit price and the service represented by each unit;
- all discounts and criteria for discounts;
- methods for calculating offers that are not at fixed prices;
- interconnection points;
- geographical areas where services are rendered;
- all significant limitations on delivery;
- all technological and physical characteristics, including interfaces used on interconnection points, as well as the standards in use;
- quality level;
- customer maintenance;
- the obligation to observe confidentiality between parties, confidentiality of data and plans, and protection of personal information;

- warranties and payment;
- unforeseen events and special circumstances;
- security and tapping;
- term of contractual agreement and termination of agreement;
- handling of matters of dispute;
- terms and conditions for fair compensation when it is not possible to provide the agreed quality level;
- other general contractual terms and conditions.

In other respects than those set forth in this section, the reference offer shall be in accordance with the Rules concerning Reference Offers for Interconnection, no. 94/2002.

575. If Síminn's reference offer is not considered sufficient for the market, PTA may require that it be amended in accordance with Article 29, Paragraph 2 of the Electronic Communications Act. Given the problems that have emerged in previous contractual negotiations with Síminn, PTA considers it appropriate to stipulate that Síminn may not demand a bank guarantee from electronic communications undertakings without special permission from PTA.

576. In order to enhance the credibility of wholesale prices, PTA considers it necessary that Síminn, in collaboration with PTA, make public the accounting information on the performance of its wholesale telephone services over the past year. PTA is of the opinion that such a requirement is authorised pursuant to Article 29, Paragraph 1 of the Electronic Communications Act.

577. PTA requires that Síminn inform other electronic communications undertakings of price changes no later than two months before the changes are implemented. However, PTA considers it appropriate to maintain the notification periods that have been customary as regards interconnection areas and interconnection points, as both Síminn and Vodafone have pledged to announce changes in these criteria with six months' notice. Other changes are announced with three months' notice, in accordance with the companies' reference offers, and PTA considers it appropriate to continue this practise.

578. All electronic communications undertakings that conclude interconnection agreements, including agreements concerning call transit in fixed-line networks, are required to send PTA a copy of these agreements immediately, and no later than one week after they are signed; cf. Article 24, Paragraph 6 of the Electronic Communications Act.

579. Based on the authority in Article 29 of the Electronic Communications Act, PTA intends to impose on Síminn the obligation to observe transparency and to publish a reference offer, terms and conditions for supply and use, price lists, and accounting information for wholesale telephone services. Síminn is also required to notify PTA of all amendments to the agreements or reference offers concerned. Amendments to reference offers shall not take effect until they have been approved by PTA. The information submitted must state explicitly the substance of the amendments and must indicate where in the agreement or reference offer changes have been made. .

7.4.7.4 Accounting separation

580. If an obligation to practise non-discrimination is to be effective, it requires that Síminn be required to practise accounting separation so that it will be possible to confirm that the company complies with the requirement that it sell services to external customers at the same prices that it charges its own retail departments.

581. Accounting separation aids in identifying possible inadequacies in the market and revealing whether non-discrimination is practised in the market under scrutiny, or whether market proportions are distorted. These obligations promote enhanced transparency because they shed light both on wholesale prices and on internal transfer prices of the company's products and services. They also give PTA the opportunity to determine whether the non-discrimination obligations are being adhered to and to address problems related to price-based competition. PTA considers it necessary to impose an accounting separation obligation so as to assist the Administration in determining the level of compliance with existing rules, and it takes the view that this is necessary if the obligations concerning transparency and non-discrimination are to be effective.

582. Based on the authority in Article 31 of the Electronic Communications Act, PTA intends to impose an accounting separation obligation on Síminn. Such separation shall involve, at a minimum, the separation of accounting for wholesale fixed-line telephone operations, on the one hand, and retail fixed-line operations, on the other, from other activities. Síminn's internal transfer prices at the wholesale level shall be transparent for the purpose of preventing unfair cross-subsidy, among other things. If Síminn's accounting separation should prove insufficient, PTA reserves the right to impose obligations for further separation at a later date.

583. Síminn shall, in its accounting, separate revenues, expenses, financial items, and capital for its telephone network. Síminn shall submit to PTA, on an annual basis, a specially itemised profit and loss account and balance sheet for its wholesale and retail operations, together with a summary of the division of indirect expenses that cannot be categorised through comparison with other expense items. The above-described summary for the prior year must be received by PTA by 1 April each year.

7.4.7.5 Price controls

584. Pursuant to Article 32 of the Electronic Communications Act, PTA may impose on an electronic communications undertaking obligations concerning cost orientation of prices, as well as 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 is discussed in the section on competition problems, PTA is of the opinion that Síminn could have the incentive to charge excessively high prices if the company were not subject to price controls.

With reference to Article 32 of the Electronic Communications Act, PTA intends to impose on Síminn an obligation concerning price controls. It also intends to require that the company offer call transit services in the fixed-line network at cost-oriented prices, including a suitable return on capital employed. Síminn shall prepare a cost model for calculation, no later than six months following the publication of the Administration's decision, using historical costs as a

reference for its price lists. Based on the authority contained in the Electronic Communications Act, PTA will also use the operations of a comparable, efficiently run service as a guideline. Based on the results of the cost analysis and on comparison with prices in other EEA states, PTA will assess, on an annual basis, whether it is more suitable to use the LRIC⁸⁷ method than to use the historical cost method to determine the company's price lists.

585. Due to the fact that interconnection charges have dropped in the reference countries in recent years while Síminn's have remained stable, PTA intends not to authorise any increases in Síminn's interconnection prices under the current circumstances. Síminn is therefore prohibited from charging call transit prices that are higher than those in the current price list; that is, ISK 0.15/connection, ISK 0.30/minute at the day rate, and ISK 0.15 at the evening, night, and weekend rate. Following the cost analysis described in the preceding paragraph, PTA will determine new prices.

7.4.7.6 Cost accounting

586. Cost accounting is necessary when an obligation concerning price controls has been imposed on an electronic communications undertaking with significant market power. In addition to imposing on Síminn an obligation concerning price controls, the Administration also intends to impose a cost accounting obligation on the company. The cost accounting obligation supports the obligations concerning cost-oriented prices, is necessary for the implementation of accounting separation, and could assist PTA in monitoring non-discrimination.

587. So that Síminn can demonstrate that its price list for a given type of service or product is based on costs, it is necessary to introduce cost accounting that includes, identifies, assesses, and allocates the appropriate costs to the pertinent services or products in accordance with recognised principles; that is, cause and effect.

588. No later than six months after the publication of the decision on the relevant market, Síminn shall submit to PTA a description of its cost accounting for call transit services in the fixed-line network and shall publicise its principal expense categories, as well as the rules used to allocate costs. At the same time, Síminn shall submit to PTA a report from an independent auditor stating that there is consistency between the company's descriptions of cost allocations and the execution of its cost accounting system.

589. PTA is of the opinion that, without an obligation to maintain cost accounting, Síminn could price its services in the relevant market in excess of costs or could have an abnormally small difference between wholesale and retail prices, which could have a detrimental effect on competitors and users. Without the obligation to practice cost accounting, PTA could not ensure that prices will be based on costs and would therefore be unable to prevent problems of this sort.

590. Therefore, PTA intends to impose on Síminn an obligation to maintain cost accounting for call transit services.

⁸⁷ Long-run incremental costs.

7.4.8 Assessment of the effects of obligations in Market 10

7.4.8.1 The necessity for the obligations

591. In accordance with the principle of proportionality, it is appropriate to assess the need for the obligations described above. The obligations are conducive to achieving the objectives set forth in the Electronic Communications Act, no. 81/2003, concerning effective competition and cost-efficient electronic communications. In view of the competition problems that exist in the market, Síminn's strong position on the relevant market and the position of the Síminn group in general, PTA considers it necessary to impose all of the above-mentioned obligations on Síminn in order to promote increased competition and safeguard consumer interests. PTA considers each of these obligations necessary, and in its examination of the relevant market, it has come to the conclusion that there are no other measures that could be as effective in resolving the competition problems in the market.

592. The obligation to provide wholesale transit services is a necessary premise for effective competition in the fixed-line telephone market. It is not possible to solve the competition problems described above without imposing an obligation to grant access to call transit.

593. The non-discrimination obligation is necessary to enable other undertakings to compete with Síminn in the markets for fixed-line services. As a result of the obligation, all electronic communications undertakings that purchase call transit services from Síminn should receive comparable services and be charged prices comparable to those Síminn charges its own departments, thus solving the competition problems related to these factors.

594. In PTA's estimation, the publication of a reference offer is an extremely important element in promoting competition in the market for fixed-line services. It is necessary that undertakings considering entering the electronic communications market be able to evaluate the terms available for access to call transit. The transparency obligation is also necessary in order to ensure compliance with the non-discrimination obligation.

595. PTA considers it necessary to require accounting separation because, among other things, accounting separation is a prerequisite for a satisfactory analysis of the cost of operating the fixed-line network. PTA does not consider it possible to use other, less stringent, methods if the cost analysis is to be based on historical costs. Furthermore, the obligation is necessary in order to ensure that Síminn practises non-discrimination with respect to the prices it charges its retail divisions, on the one hand, and unrelated companies, on the other.

596. PTA is of the opinion that the price controls obligation is absolutely necessary, as Síminn has no incentive to offer appropriate prices on its own initiative because it is by far the largest operator in this market. PTA considers that the price controls obligation will result in more efficient operation of the fixed-line network, which will ultimately result in lower prices charged to consumers.

7.4.8.2 The impact of the obligations

597. It is necessary to assess whether the burden represented by the obligations that PTA intends to impose on Síminn in the relevant market is justifiable in view of the objectives the obligations are meant to achieve. On the whole, the obligations that PTA intends to impose on

Síminn represent some burden to the company. On the other hand, PTA considers the obligations to be consistent with the principle of proportionality and does not believe that they represent a greater burden than necessary. In many respects, the obligations are similar to those that have applied in the relevant market, but they include several elements that have been lacking. Furthermore, the content of each obligation is described in greater detail, and an attempt is made to ensure that the obligations are more transparent and goal-oriented than previous obligations have been.

598. As is discussed above, PTA considers it necessary to impose the discussed obligations on Síminn. Because other obligations are not better suited to achieving the set objectives, PTA considers, given the initial investment and the risk that was taken with that investment, that this is not an unreasonable requirement.

599. The obligation to grant access represents some burden for Síminn; however, it is a prerequisite for the introduction of effective competition in the markets. It is not possible to solve the competition problems described above without imposing an obligation to grant access to call transit. Síminn will have to incur some expense and inconvenience as a result of this obligation; however, the company will receive an appropriate price for the access granted, and the obligation could result in better utilisation of the equipment in which it has invested.

600. The obligation to observe transparency, including the publication of a reference offer, involves some inconvenience for Síminn. It is necessary to bear in mind, however, that Síminn has already published such an offer and must now only update it to fulfil the requirements set forth here. The burden that this entails for Síminn is not overly onerous, however, in light of the fact that this obligation is necessary to promote competition.

601. PTA does not consider the non-discrimination obligation especially onerous, as it is an appropriate requirement to make of a company such as Síminn, which has significant market power in many segments of the electronic communications market and belongs to the Síminn group.

602. PTA does not consider the obligation concerning accounting separation too onerous given the objective it is designed to achieve, as it is a normal part of modern business operations to separate production/operation costs for the various products or services that a company sells.

603. PTA believes the obligation concerning price controls is somewhat onerous, and that enforcing it will generate some expense for both Síminn and PTA. Although the obligation will generate some cost and inconvenience, PTA believes that it will not reduce Síminn's chance to earn an appropriate profit on the operation of its fixed-line networks and related infrastructure.

604. The obligations will not obstruct the build-up of fixed-line networks, as the price of call transit will be based on costs plus a reasonable return on capital employed. Therefore, price controls should not diminish the will to invest over the longer term.

605. In PTA's estimation, the above-described obligations are both appropriate and necessary in order to promote effective competition, and they should not prove unnecessarily onerous. PTA is of the opinion that these obligations are in the interest of long-term competition and are designed to increase the supply of services in the market for fixed-line

services and the electronic communications market as a whole.